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JAMES W. VANSTONE

An Archaeological Collection from Somerset Island and Boothia Peninsula, N.W.T.

J. E. ANDERSON and
C. F. MERBS

A Contribution to the Human Osteology of the Canadian Arctic

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A Contribution to the Human Osteology of the Canadian Arctic

Art and Archaeology Editorial Committee

Chairman: HAROLD B. BURNHAM

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The maps were drawn by Dr. Rogers, and the photographs are the work of Mr. Lee Warren.

Introduction

The archaeological materials to be discussed in this report were collected by Mr. L. A. Learmonth of Georgetown, Ontario between 1939 and 1949 when he was associated with the Hudson's Bay Company in the central arctic. Most of the collection was made during 1948 and 1949 when Mr. Learmonth was manager of the post at Fort Ross, located at the eastern mouth of Bellot Strait which divides Somerset Island from Boothia Peninsula (see Figures 1 and 2). Mr. Learmonth, who founded the post at Fort Ross in 1937, served the Hudson's Bay Company for nearly fifty years. During his term of service in the Somerset Island-Boothia Peninsula area, he corresponded frequently with members of the staff at the Royal Ontario Museum and was encouraged to make the collections which form the basis of this report. Most of the excavation and surface collecting was done by Mr. Learmonth himself, occasionally with the assistance of local Eskimos, and the letters accompanying each shipment of artifacts to the Royal Ontario Museum give pertinent information about the location of the sites, number of houses, extent of excavation and occasionally comments about cultural relationships. This information was transferred to cards when the material was catalogued, and it was from these that the present author worked in compiling this report. In addition, he had access to the extensive Learmonth correspondence which includes maps, some photographs, and other useful data.

Although no completely accurate count was made, it is estimated that the Learmonth collection contains more than 2000 artifacts. Much of this material consists of worked bone and other rejected debris, and there is also some ethnographic material. The artifacts from seven sites on Boothia Peninsula and Somerset Island were chosen for analysis in this report, largely on the basis of size of the collection, ability to locate the site accurately, and availability of other information concerning the site. Of these factors, the one involving the size of the collection was by far the most important since, in a report of this kind on archaeological materials not excavated by the author, it is the artifacts themselves that provide the important information. The preparation of such a report is, of necessity, a frustrating experience. The author was continually wishing that more data and more artifacts were available. Ordinarily, the value of a report of this kind might be considered dubious, and this would certainly be true in an area that is well known archaeologically. This can by no means be said about the central arctic and, although much work has been done in recent years, it still seems desirable to document the existence of particular sites and describe the materials taken from them.

Much of the archaeological work throughout the arctic in recent years has been focused on the problem of understanding the earliest phases of cultural development. Relatively little attention has been paid to increasing our knowledge of later cultures, and our understanding of even such a basic manifestation as the Thule culture remains little changed since the appearance of Holtved's monograph in 1944. The relationship between the late prehistoric cultures in the central arctic

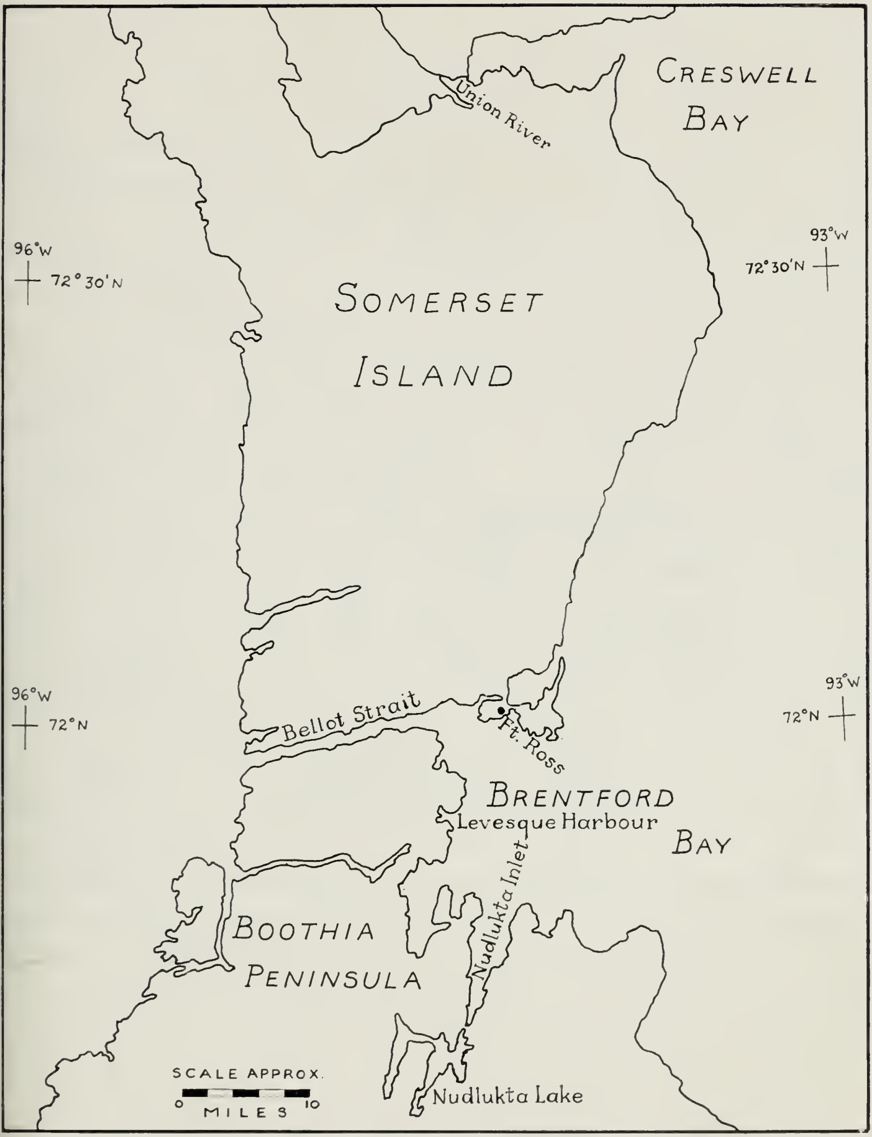

FIGURE 1 MAP OF THE REGION OF BOOTHIA PENINSULA-SOMERSET ISLAND

and the historic Eskimo cultures is another problem that has received little attention in the past twenty-five years. Although an analysis of the Learmonth collection cannot be expected to solve any of the important outstanding problems in arctic archaeology, it will possibly focus attention on some of the more neglected problems relating to the later cultural developments.

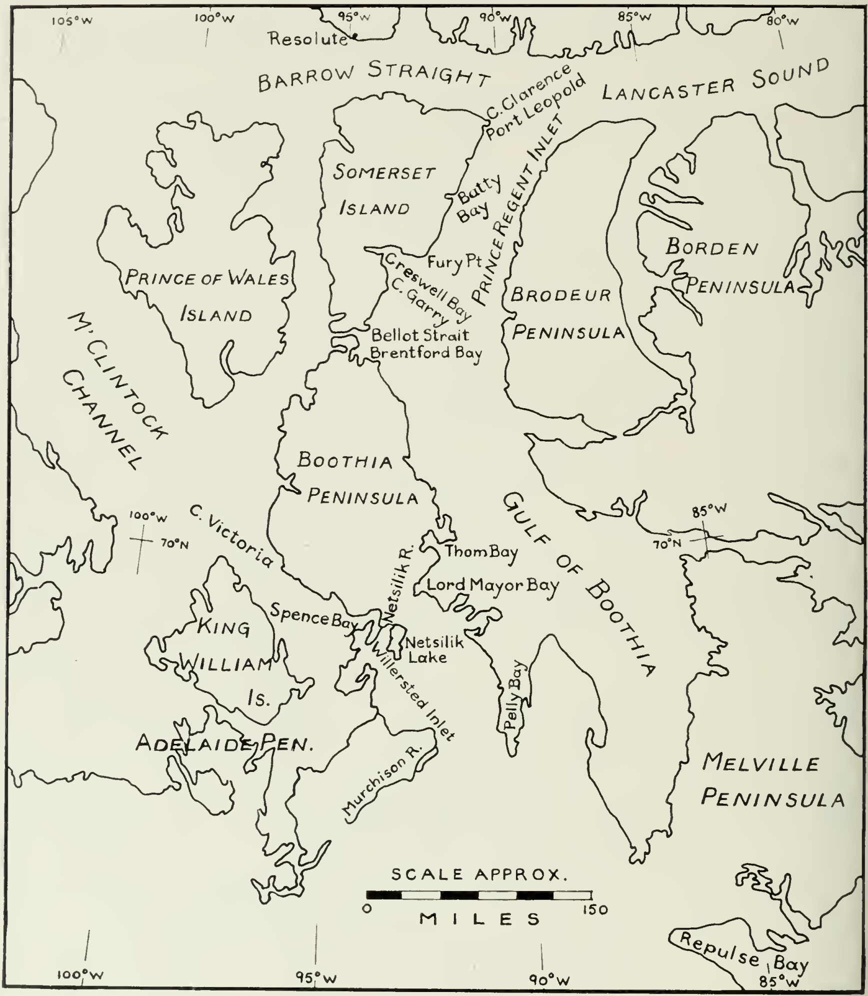

FIGURE 2 MAP OF THE REGION OF BELLOT STRAIT

Historical Background

Since a large amount of the material in the Learmonth collection can be associated with modern Netsilik Eskimo culture, it would seem worth while to say something about European exploration in the area pertinent to this report, namely Somerset Island, Boothia Peninsula and Boothia Isthmus. Lancaster Sound, the gateway to western arctic exploration during much of the nineteenth century, was discovered by Captain William E. Parry on his first voyage in 1819. On the outward voyage, Parry also discovered and named Prince Regent's Inlet but was prevented by ice from making a landing on the west coast of the inlet (Parry, 1821, p. 47). On the return trip, he passed close to the north coast of Somerset Island, naming several capes and bays and giving the name of North Somerset to the land itself (1821, p. 265). On his third voyage in 1824–25, Captain Parry landed on the northeast coast of Somerset Island and named Batty Bay. He then proceeded along the east coast of the island as far as Cape Garry. Parry lost one of his ships, the *Fury*, at a point north of Cape Garry which he called Fury Point. The large bay between these two points he named Creswell Bay (Parry, 1889, pp. 54–7, 83). At several locations south of Batty Bay, the explorer observed traces of Eskimo settlements which he believed to be "not of recent date" (1889, p. 55).

On neither of his two visits to Somerset Island did Parry encounter any Eskimos, and it was not until the second expedition of Sir John Ross in 1829–30 that the first contact was made with the inhabitants of this area. The Ross expedition proceeded down the east coast of Somerset Island and Boothia Peninsula, wintering in Lord Mayor Bay. There, on January 9, 1830, a party of thirty-one Eskimos was encountered. The meeting was friendly, and each Eskimo was given a gift of a piece of iron hoop (Ross, 1835, pp. 242–48). An account of this meeting, as remembered by living Netsilik, was told to Rasmussen in 1923 (Rasmussen, 1931, pp. 27–28) and to Learmonth in the late 1940's (Learmonth, 1948, pp. 10–13). The crew of Ross's ship, the *Victory*, continued to have frequent contact with the Eskimos during 1830 and 1831. James C. Ross, an officer on the *Victory* and nephew of Sir John, made an extensive sledge journey to the northeast during June, 1831 and ascertained the existence of the magnetic north pole in the vicinity of Cape Victoria. In May of 1832 the *Victory* was abandoned, and the crew made their way up the eastern coast of Prince Regent's Inlet to Port Leopold where they were picked up by a whaler in August, 1834.

The next European explorer to visit the area was John Rae who, in 1846–47, made his way north from Repulse Bay. Rae and his party visited and named Pelly Bay in April, 1847, and proceeded as far north as Lord Mayor Bay. The Eskimos with whom they came in contact in the Pelly Bay area possessed trade goods which they had obtained on Boothia Peninsula, the inhabitants of which maintained frequent contacts with people to the south and east.

Arctic exploration for the next twelve years was distinguished by the Franklin search expeditions, many of which visited the Somerset Island-Boothia Peninsula area. In 1848–49 Captain Sir James C. Ross made extensive sledge journeys on Boothia Peninsula and Somerset Island without making any contact with Eskimos (Ross, 1850, pp. 58–64). During the winter of 1851–52 Captain William Kennedy made a sledge trip along the entire east coast of Somerset Island without encountering any Eskimos and his second in command, Lieutenant J. R. Bellot, explored the north coast with similar results (Kennedy, 1853). In the spring of 1852 Kennedy discovered the strait which separates Somerset Island from Boothia Peninsula, and named it after Lieutenant Bellot (Kennedy, 1853, p. 132). Various members of the Kennedy expedition, particularly Lieutenant Bellot, observed Eskimo ruins at numerous points along the east coast of Somerset Island, most notably at Cape Clarence, Port Leopold, Batty Bay, Cape Garry and Bellot Strait (Bellot, 1855, vol. 1, p. 374; vol. 2, pp. 17, 167, 218–19, 301–02).

Rae's second trip to Pelly Bay in 1853 (Rae, 1855) was never adequately published, and gives little information about the people of the area. However, the voyage of the *Fox* under Captain F. L. M'Clintock in 1857–59 not only ascertained the fate of the missing Franklin expedition, but made extensive contact with the Eskimos of Boothia Peninsula and King William Island. During March, April and May of 1859, a sledge party from the *Fox* met various groups of Eskimos in the Cape Victoria area, and purchased Franklin relics from them. These people were well equipped with metal tools, and remembered clearly their contacts with the Ross expedition thirty years earlier. (M'Clintock, 1859, pp. 222, 232, 249).

Although other expeditions visited the Somerset Island-Boothia Peninsula area in later years, M'Clintock was the last one to provide us with information about the Eskimo inhabitants until the beginning of modern ethnographic work in the region. The picture that emerges is of a population largely centred in the southeastern part of the total area, although archaeological remains suggest a wider distribution, particularly on Somerset Island, in the past. It is significant that Sir James C. Ross could have made extensive sledge journeys on Somerset Island during the winter of 1848–49 without encountering a single Eskimo (Ross, 1850, pp. 58–64). Boas, on the basis of an interpretation of the historical accounts, believed that the Netsilik expanded their territory to include King William Island and the Adelaide Peninsula after the loss of the Franklin expedition. This expansion was apparently caused by the profusion of metal and wood that was available in the area after the Franklin ships were abandoned (Boas, 1888, pp. 457–58). It is clear, however, that in spite of this general movement to the west and south, the Netsilik Eskimos have continued to frequent the region around Netsilik Lake which has given its name to the tribe. According to a census made by Rasmussen in 1923, there were fifty-four Eskimos living around Pelly Bay, sixty-six on Boothia Isthmus, thirty-seven along the Murchison River, eighteen at Bellot Strait and eighty on the Adelaide Peninsula (Rasmussen, 1931, p. 84). Although perhaps outside the main range of movement of the Netsilik people, Somerset Island apparently still attracts a certain number. In April of 1939 there were settlements of Eskimos at Creswell Bay, Port Leopold, Elizabeth Harbour and Thom Bay (Turner, 1950, pp. 26–31). The establishment of a Hudson's Bay Company post at Fort Ross, and its later transference to Spence Bay has doubtless been an important factor in stabilizing at least some of the Netsilik population in the general area of Boothia Isthmus.

The Levesque Harbour Site

The collection of artifacts from this site was excavated from four whale bone house ruins located in a small harbour on the northeast tip of Boothia Peninsula just south of the east entrance to Bellot Strait. William Kennedy, the first European to visit the area, considered the northern extremity of Boothia Peninsula to be an island to which he gave the name of Levesque Island in April, 1852 (Kennedy, 1853, p. 132). M'Clintock, in the summer of 1858, reported that "finding nothing could be effected in Bellot Strait, we sought in vain for a more southern channel which should exist to form Levesque Island: we did, however, find a beautiful harbour, and are now securely anchored in its north-west arm; I have named it after the gentleman whose former island I have thus reluctantly converted into the northern extreme of the Boothian Peninsula, ..." (M'Clintock, 1859, p. 184). The *Fox* was in Levesque Harbour on August 23, 1858 and remained there for twenty-four hours while waiting for the ice to go out of Bellot Strait. During a short visit ashore on that day, M'Clintock observed Eskimo ruins and may have seen the site under discussion.

The artifacts from the Levesque Harbour site are described below under the appropriate cultural headings.

SEA HUNTING

There are twelve complete and six fragmentary *harpoon heads* in the Levesque Harbour collection. Fifteen are of bone and three of antler. Four complete harpoon heads have open sockets, lashing slots, a single dorsal spur, and powerful opposite barbs. These belong to Mathiassen's Thule type II (Pl. I, 13–14). Another specimen, which is not quite complete, has a lashing groove and no line hole. Three fragmentary specimens also appear to belong to Thule type II.

Two complete specimens have open sockets, drilled lashing holes and a blade slit parallel to the line hole (Pl. I, 21). Another complete head is the same except for having a lashing slot rather than drilled holes. Two fragmentary specimens appear to be of the same general type; one of them has a hole for a bone peg to hold the blade in place. All these harpoon heads belong to Mathiassen's Thule type III.

A single complete head has a closed socket, one dorsal spur, and blade slit at right angles to the line hole. This is similar to the Thule type IV (Pl. I, 16). Another single specimen has a closed socket, single dorsal spur and blade slit with a rivet hole parallel to the line hole (Pl. I, 18). There are two basal fragments which are not complete enough for typing. Both have single dorsal spurs and open sockets. One has slots and the other drilled holes for lashing. There are four roughly made harpoon head blanks, two of antler and two of bone. One bone specimen is complete enough to suggest that it belongs to the Thule type I category (Pl. I, 15).

Of the two *harpoon socket pieces*, one is of bone and the other of antler. Both have wedge-shaped tangs scored for lashing (Pl. II, 10). One specimen is quite small and presumably for a bladder dart or other light harpoon (Pl. II, 14).

There are five *harpoon foreshafts*, three of bone and two of antler, all drilled for line attachment. All are oval in cross section with pointed tangs (Pl. II, 15).

Pointed sections of bone or antler, lashed to the lower end of a harpoon shaft, served as *ice picks*. Three specimens of bone and one of antler are obliquely cut at the distal end and scored for lashing. Two have holes for a bone peg (Pl. II, 13). A single bone specimen is shouldered and broken at the distal end (Pl. I, 12).

There are two large bone *lance heads* which served as intermediate pieces for fixing between the shaft and the lance blade. One is unfinished, but has a slot for the blade and is wedge-shaped at the distal end. The other, broken at the proximal end, has a blade slit with a hole for a bone peg (Pl. II, 11).

A single pointed needle-like bone object with a flattened head served as a *wound plug* for closing the wounds of seals and preventing the blood from escaping (Pl. I, 8).

An oblong object of wood with a flange at each end probably served as a *handle for a harpoon bladder*. Such an object would be bound with the skin of the bladder, forming a handle around which a line could conveniently be fastened (Pl. II, 12).

LAND HUNTING

There are fourteen *bola balls* of bone from the site. All are somewhat roughly formed with rounded edges and a drilled hole for the cord (Pl. I, 19).

Of the four *arrowheads*, only two are complete. One of these, made of bone, has a plain, conical tang, a large barb on one side and a series of small serrations on the other (Pl. I, 9). The second complete specimen, made of antler, is barbless with a series of very slight serrations along one edge. Of the two incomplete specimens, one is of bone and the other of antler. The antler specimen has a single large barb and is broken at the tang. The bone specimen is broken at the distal end but has a sharp shoulder and conical tang with two small opposite barbs.

Three barbed bone points may be regarded as *side prongs* for bird darts. One small specimen is barbed on one side (Pl. I, 5), while the others have sizeable barbs on one edge (Pl. I, 2).

FISHING

The typical Eskimo fish spear with two side prongs with large barbs turned inward and a smaller centre prong is characteristic of the site. Two *side prongs* of bone and one of antler have holes drilled for the barb (Pl. I, 1), while one specimen of bone has holes for lashing and a sloping surface against which the barb was lashed (Pl. I, 4). Two bone specimens are unfinished but apparently were intended to have a drilled hole for the barb.

Barbs for fish spears are also of two types. Two bone specimens have holes drilled for lashing to the side prong (Pl. I, 17). Two bone specimens of doubtful use were perhaps meant for insertion into the drilled hole of a side prong (Pl. I, 11).

There are four bone *centre prongs*, two of which are barbed on both sides near the distal end (Pl. I, 3). The other two are plain (Pl. I, 6).

A single *fish needle* has a drilled hole at one end, and was used for stringing fish (Pl. I, 7).

TOOLS AND MANUFACTURES

Of the three *wood-splitting wedges*, two are of bone and one of antler. Two have been sharpened at one end by hewing with an adze on one face, while the third is hewn on both faces. The larger bone specimen is flattened at one end indicating a pounded surface (Pl. III, 2).

Two closed socketed bone *adze heads* conform to the same general type. They are provided with a flattened face for handle attachment on one surface, and at right angles to this surface are three drilled holes for lashing (Pl. III, 7). There are no objects that can definitely be identified as adze handles or blades. The blade slit in one of the heads, however, is extremely thin suggesting the use of a thin slate blade approximately 2.5 cm. in length. The blade slit in the other specimen suggests a blade about 4 cm. in length and .5 cm. wide.

The twelve one-piece *end-bladed knife handles* are of basically the same form, but differ in detail (Pl. II, 2–5). Five are of bone and seven of antler. Six specimens have drilled holes at the proximal end for suspension (Pl. II, 3–4). Nine have sockets at one end that are wide and deep enough to receive a stemmed blade. One of these has a small hole for a bone peg drilled near the blade slit (Pl. II, 2). The remaining three have very narrow blade slits that appear to have been intended to receive a metal blade. One of these actually has the remains of a metal blade still in place (Pl. II, 5).

There are four *side-bladed knife handles*, all of bone, three of which have a slightly curved blade slit at one end (Pl. II, 6). A fourth handle has a blade slit 14.4 cm. long that runs nearly the entire length of the specimen (Pl. II, 1). All four handles are drilled for suspension or attachment to a short shaft. Two have well formed wedge-shaped tangs.

A single *composite knife handle* of bone has a thin blade slit with a lashing tip at the blade end, and a drilled hole for suspension at the proximal end (Pl. II, 8). Only one half of the knife is present in the collection.

The single piece of slate appears to be part of an *ulu blade*, but is too fragmentary for accurate description. The general absence of slate from the Levesque Harbour collection may reflect selection on the part of the collector, although slate tools are often rare in eastern Thule sites.

There are two *ulu handles*, one of bone and one of antler. The antler specimen is oval in cross section with a blade slit in one edge, and a hole for suspension (Pl. III, 5). The bone handle has a thick back which narrows into a thinner part in which the blade slit is made. There is a hole to support the fingers (Pl. III, 4).

Snow knives are the second most numerous artifact category in the Levesque Harbour collection. All thirteen specimens are of bone and are fragmentary, but four are complete enough to indicate the general form. All have slightly curved blades and sharp shoulders which separate the blade from the handle (Mathiassen's type 1). Five specimens have drilled holes in the handles for suspension (Pl. III, 6).

A number of heavy pieces of bone were presumably used as *heads for heavy mattocks* which were used for cutting turf for building houses. There are four nearly complete specimens and three fragments. Two complete specimens and two fragments have large holes at one end for the insertion of the handle. A single specimen has a similar hole that extends only part way through the blade, as well as lashing slots for fixing the handle to the blade (Pl. III, 1). Another fragmentary specimen appears to be similar. All specimens are made of whale rib sections.

Two large but fragmentary sections of walrus scapula were doubtless used as *shovel blades*. One specimen has been flattened and narrowed at one end while the other has several drilled holes for lashing to the handle (Pl. III, 3).

Three caribou astragali may have been used as *mouthpieces for bow drills*, although in none of the specimens has the natural hollow been widened and deepened as would be expected (Pl. I, 20).

There are six fragments of *soapstone cooking pots*. They vary in thickness from 0.7 cm. to 2.2 cm. Only one is large enough to indicate shape and this appears to be a fragment of a large vessel with straight sides. Three fragments have suspension holes near the rim. Drilled holes in two other fragments served for binding one piece to another.

Two soapstone *lamp* fragments also occur in the collection. One appears to be about half of a small, crudely hollowed out lamp (Pl. I, 23), while the other is from a more carefully finished specimen.

TRANSPORTATION

Evidences of transportation are confined to sledging. There are thirteen flat *sledge shoe* sections, all made of whale bone. Holes for pegging to a runner are irregularly spaced. The width of the shoes varies from 2.2 cm. to 5.5 cm. and many of the sections are thin, showing considerable wear (Pl. II, 7, 16).

Evidence of dog traction is confined to the occurrence of two small *trace buckles* which are made of bone and have two holes drilled in the same plane (Pl. II, 9).

SKIN WORKING AND TAILORING

The Levesque Harbour collection contains a single *awl* such as might have been used in skin sewing. It is simply the sharpened end of an antler tine.

PERSONAL ADORNMENT

A single tooth pendant with a small drilled hole was probably part of a necklace or amulet (Pl. I, 10).

A distinctive ivory figurine of a nude female is included here although its identification as an object of personal adornment is doubtful. The figurine is standing on a tubular base and is depicted with the hair drawn into a knot on the top of the head. The facial features are not indicated (Pl. I, 22).

ANALYSIS

The material from the Levesque Harbour site is typical of the Thule culture, and is closely related to the material from Naujan in Repulse Bay (Mathiassen, 1927, I, pp. 6–84). In fact, only three artifact types from Levesque Harbour cannot be duplicated in the Naujan collection. These are the harpoon head with closed socket and blade slit parallel to the line hole (Pl. I, 18), the side-bladed knife with wedge-shaped tang for hafting (Pl. II, 1), and the ivory female figurine (Pl. I, 22). However, these three forms have been reported from closely related sites. A harpoon head with closed socket and blade slit parallel to the line hole is described by Mathiassen from his Mitimatalik-Qilalukan collection (1927, I, p. 148) which he believes to be slightly later than Naujan. Hafted side-bladed knives, probably used as flensing knives, were found by Rasmussen at Malerualik, a Thule culture site on King William Island thought to be slightly older than Naujan (Mathiassen, 1927, I, p. 316). An ivory female figurine almost exactly like the one from Levesque Harbour was found by Collins in a Thule house at Resolute, Cornwallis Island (Collins, 1952, Pl. XXI, 21).

Since harpoon heads are the most diagnostic implement type in arctic archaeological collections, a few comments might be made about those from the Levesque Harbour site. The single Thule type I specimen has its closest counterpart at Naujan (Mathiassen, 1927, I, Pl. I, 1), while the barbed types, Thule type II, with lashing slots rather than drilled holes most closely resemble those from Naujan (Mathiassen, 1927, I, Pl. I, 2–4) and other central arctic sites as well as those from Inglefield Land in northwest Greenland (Holtved, 1944, I, Pl. III, 1–5). Heads resembling Mathiassen's Thule type III with drilled holes for lashing also resemble those from Inglefield Land (Holtved, 1944, I, Pl. IV, 4–7) and Naujan (Mathiassen, 1927, I, Pl. I, 8–11). Collins has suggested that "drilled lashing holes are later than slots, the technique having been developed by the Thule Eskimos after their arrival in the east" (Collins, 1950, p. 22). However, the trait is present in the western Thule site at Kotzebue, Alaska suggesting that it may well have been part of the Thule culture at the time of the original eastward movement (VanStone, 1955, p. 103). The single harpoon head from the Levesque Harbour site that belongs to Mathiassen's Thule type IV most closely resembles those from Naujan (1927, I, Pl. II, 1), Inglefield Land (Holtved, 1944, I, Pl. IV, 9–11) and Frobisher Bay (Collins, 1950, Pl. 5, 18). This form occurs as a minority type in most of the eastern Thule sites, but is very common in early Punuk times in Alaska (Collins, 1937, Pl. 28, 25–27). Closed socket harpoon heads with blade slit running parallel to the line hole are also rare in eastern Thule sites, but are locally developed along the north coast of Alaska. The form also occurs in Inglefield Land (Holtved, 1944, Pl. IV, 11, 18). In summary it can be said that the harpoon heads place the Levesque Harbour site with the older eastern Thule sites, Naujan in Repulse Bay, Crystal II in Frobisher Bay and Inuarfigssuaq in Inglefield Land.

Although it is difficult to generalize about the Levesque Harbour site on the basis of a relatively small collection of artifacts, it may be that, like Rasmussen's Malerualik site (Mathiassen, 1927, I, pp. 306–21), it represents a Thule culture adapted to a less satisfactory environment. Certainly there is no evidence that whales and walrus were hunted to the extent that they were at Naujan and other Thule sites to the south. It may have been that caribou hunting played a greater part in the economy of the Levesque Harbour people, just as it did at Malerualik.

LEVESQUE HARBOUR TRAIT LIST

	H-1	H-2	H-3	H-4
SEA HUNTING				
Harpoon head, Thule type II (Pl. I, 13–14)	3	1	1	3
Harpoon head, Thule type III (Pl. I, 21)	2	2		1
Harpoon head, Thule type IV (Pl. I, 16)				1
Harpoon head, closed socket, blade slit parallel to line hole (Pl. I, 18)				1
Harpoon head fragment		1		1
Harpoon head blank (Pl. I, 15)	2	2		
Harpoon socket piece (Pl. II, 10,14)	1		1	
Harpoon foreshaft (Pl. II, 15)	1	2	1	1
Harpoon ice pick (Pl. I, 12; Pl. II, 13)	5			
Lance head (Pl. II, 11)	1	1		
Wound plug (Pl. I, 8)		1		
Handle for harpoon bladder (Pl. II, 12)		1		
LAND HUNTING				
Bola ball (Pl. I, 19)	10	3	1	
Arrowhead (Pl. I, 9)	3	1		
Bird dart side prong (Pl. I, 2, 5)	2			
FISHING				
Side prong for salmon spear, holes drilled for barb (Pl. I, 1)	2	1		
Side prong for salmon spear, holes for lashing (Pl. I, 4)		1		
Side prong for salmon spear, unfinished	2			
Side prong barb, for insertion into drilled hole (Pl. I, 11)		2		
Side prong barb, holes drilled for lashing (Pl. I, 17)	1	1		
Centre prong for fish spear (Pl. I, 3, 6)	3	2		
Trout needle (Pl. I, 7)		1		
TOOLS AND MANUFACTURES				
Splitting wedge (Pl. III, 2)	2	1		
Adze head (Pl. III, 7)		1		
End-bladed knife handle (Pl. II, 2–5)	3	1	6	2
Side-bladed knife handle (Pl. II, 1, 6)	2		1	1
Composite knife handle (Pl. II, 8)	1			
Ulu blade	1			
Ulu handle (Pl. III, 4–5)	2			
Snow knife (Pl. III, 6)	7	3	2	1
Mattock blade (Pl. III, 1)	6		1	
Shovel blade (Pl. III, 3)	1	1		
Bow drill mouthpiece (Pl. I, 20)	1	1		1
Cooking pot fragments	4	1	1	
Lamp fragments (Pl. I, 23)		1	1	
TRANSPORTATION				
Sledge shoe (Pl. II, 7, 16)	9	3	1	
Trace buckle (Pl. II, 9)	2			
SKIN WORKING AND TAILORING				
Awl	1			
PERSONAL ADORNMENT				
Pendant or amulet (Pl. I, 10)		1		
Figurine (Pl. I, 22)	1			

The Creswell Bay Sites

There are apparently many archaeological sites in the Creswell Bay area, the largest of which is near the mouth of the Union River at the west end of the bay. The collection of artifacts comes, however, from three sites, each consisting of from twenty to thirty whale bone house ruins as well as many graves, on the southeast shore of the bay in the vicinity of Cape Garry. According to Mr. Learmonth, all these sites have been badly disturbed by present-day Eskimos looking for whale bone to use for sledge shoeing.

As previously mentioned, Creswell Bay was explored and named in August, 1825 by Captain Parry on his third voyage (Parry, 1889, p. 83). He makes no reference to Eskimo ruins but twenty-seven years later, in April, 1852, Lieutenant Bellot, second in command of the Kennedy expedition, noted numerous ruins in the vicinity of Cape Garry that may be those from which this collection was made (Bellot, 1855, vol. 2, p. 167). At any rate, from all reports Creswell Bay seems to have been an important population centre since Mr. Learmonth lists a total of six sites in the immediate vicinity, not including those from which the artifacts in this collection were taken.

The artifacts from the three Creswell Bay sites are described below. All are characteristic of the Thule culture as described by Mathiassen for the Naujan site, and most are similar to previously illustrated specimens from the Levesque Harbour site. Only specimens not previously illustrated are described in detail.

SITE A

2 one-piece snow knives of bone.

2 end-bladed knife handles of bone.

1 net sinker (?). An irregularly shaped, oblong antler section with a drilled hole at each end (Pl. IV, 7).

1 whetstone. Roughly rectangular in shape and ground on one side only. The specimen shows signs of considerable use (Pl. IV, 8).

1 bone harpoon head belonging to Mathiassen's Thule type III. There is an inverted Y design just above the line hole.

1 spoon that appears to be unfinished. A bone specimen with a narrow, oblong, shallow bowl (Pl. IV, 9).

4 bone ulu handles. Two have thick backs and holes to support the fingers similar to a specimen previously illustrated. Two specimens are flat and rectangular with a long, narrow blade slit (Pl. IV, 6).

SITE B

2 one-piece snow knives of bone.

2 splitting wedges, one of bone and the other of antler. These are small but otherwise similar to the Levesque Harbour specimens.

1 end-bladed knife handle of bone.

1 adze head of bone.

1 soapstone cooking pot fragment.

1 bone sledge shoe section with drilled holes for pegging to a runner.

1 bone handle for fastening line to harpoon bladder.

1 moveable foreshaft for a throwing harpoon. This bone specimen is wedge-shaped at both ends and has a centrally placed line hole (Pl. IV, 2).

1 mattock head fragment. This bone specimen has a carved out section for setting the handle with four drilled holes for lashing (Pl. IV, 3).

1 fragmentary lance head of bone. There is a blade slit at one end with a rivet hole and remnants of a metal blade. The proximal end is incomplete, but there is a drilled hole which suggests that the specimen may be a moveable lance head (Pl. IV, 1).

1 arrowhead of antler with a single barb, sloping shoulder and conical tang with a slight bulge (Pl. IV, 5).

2 antler centre prongs for fish spears have multiple opposite barbs and wedge-shaped tangs with a small lashing knob (Pl. IV, 4).

1 bone trace buckle.

SITE C

3 bone sledge shoe sections, one with pegs intact.

1 bone mattock head with a hole at one end for lashing to the handle.

1 bone awl.

1 bone handle for fastening line to harpon bladder.

1 large, bone mattock handle.

1 side-bladed knife handle of bone with hole for suspension at the proximal end.

1 bone splitting wedge.

1 harpoon ice pick of bone with a wedge-shaped tang and drilled hole for pegging to the shaft.

1 large bone cross piece for a flat bedded sledge. This rectangular piece is notched at either end for lashing to the runners, and has been mended. The cross piece is broken in the middle, and has two drilled holes on either side of the break for lashing the two sections together.

ANALYSIS

As previously mentioned, the artifacts from the Creswell Bay sites are typically Thule, and all the types except one can be duplicated from the Naujan site in Repulse Bay. Because of the small size of the collection, it is impossible to generalize beyond this point. The one artifact type that is not present at Naujan, or in any other Thule culture site for that matter, is represented by a specimen that has been doubtfully identified as a net sinker. As Mathiassen has pointed out (1927, II, p. 58), the position of the fishing net in Eskimo culture has never been fully understood. Although net sinkers are common in western Thule sites (Giddings, 1952, p. 40; VanStone, 1955, p. 91), their presence has not been reported in any eastern Thule sites, either in Canada or Greenland, and evidence for the use of the net in these areas rests almost entirely on the occurrence of a large section of a baleen net in the Mitimatalik site in Ponds Inlet (Mathiassen, 1927, I, Pl. 59). However, this specimen has such loose knots that its employment as a fishing net is subject to some dispute. Salmon nets of balleen were used by the Sadlermiut, and various early observers have reported nets from such widely separated areas as Lyon Inlet, the west coast of Hudson Bay, and the lower Back River (Mathiassen, 1927, II, p. 58). However, Sir John Ross mentions that when the Eskimos of Boothia Peninsula accompanied some of his crew on fishing trips during the summer of 1831, these Eskimos saw the use of a net for the first time (Ross, 1835, p. 55). It would seem, therefore, that the evidence for fishing nets in the eastern Thule culture is very uncertain in spite of their presence in western sites of comparable date.

The Nudlukta Site

This site is located on the west bank of a small stream that connects Nudlukta Lake and Nudlukta Inlet, an arm of Brentford Bay. The site is about sixteen miles due north of Levesque Harbour. The material in the collection appears to have been taken from five houses constructed of stone and turf which are part of a larger number standing on a high bank some fifty or sixty feet above the present sea level.

THULE CULTURE

SEA HUNTING

5 harpoon heads of bone. Three belong to Mathiassen's Thule type II. Two of these have lashing grooves and only one barb. The third has lashing holes, two opposite barbs, and a blade slit running parallel to the line hole. There is a rivet hole opposite the blade slit (Pl. V, 17). Two specimens belong to Mathiassen's Thule type III. One has lashing slots (Pl. V, 18) and the other lashing grooves. Both have rivet holes opposite the blade slit.

1 bone finger rest for a harpoon shaft has a concave base with a drilled hole for lashing to the shaft (Pl. V, 9).

2 harpoon socket pieces, both of bone, show distinct tang types. One is tube shaped, and was fitted as a collar around the upper end of a shaft to which it was lashed through a series of scored lashing slots. This is similar to Mathiassen's Thule type II (Pl. V, 2). The other specimen has a sharp shoulder and slanting, obliquely cut tang scored for lashing (Mathiassen's Thule type I). There are two drilled holes just above the tip of the tang to aid in hafting (Pl. V, 6). Both specimens are shaped to receive a round tanged foreshaft.

1 harpoon ice pick of antler.

4 wound plugs, one of ivory and three of bone. These are similar to previously illustrated specimens but one is very short with a broad knob at one end (Pl. V, 16).

1 wooden object with three tooth-like projections at one end appears to be a toy seal scratcher (Pl. VI, 1).

LAND HUNTING

3 arrowheads of bone. Two are complete, and flattened at the distal end. The two complete specimens have sloping shoulders; one has a conical tang with a single barb, while the other has a pair of opposite knobs (Pl. V, 4). The incomplete arrowhead has a sharp shoulder and conical tang with a pair of oppositely placed knobs near the tip (Pl. VI, 2).

1 bola ball of bone.

2 lengths of wood, round in cross section, which may have been parts of arrow shafts.

1 bow fragment of wood that is so incomplete as to give little information about the size or shape of the bow. It is rectangular in cross section and one side is flattened as though adapted for sinew backing.

FISHING

1 piece of soft stone with a single drilled hole and several incompletely drilled holes may have been intended for use as a net or line sinker.

3 bone side prongs for fish spears belong to the two types previously illustrated from the Levesque Harbour site.

5 barbs for fish spears are pointed pieces of bone, rounded at one end, for insertion into the drilled hole of a side prong. One specimen has a slight knob at one end (Pl. VI, 27). An antler barb is very thin in cross section and may belong to the Dorset Culture (Pl. VI, 23). One ivory specimen is equipped with three lashing holes and a lashing knob. It is similar to those of this type previously illustrated.

3 fish-shaped lures of bone. One is crudely made with a number of drilled holes. The other two are more fish-like and one of them has the gills and backbone indicated by incised lines. Both of these have line holes, presumably for attachment to the line above the hook (Pl. V, 19, 20).

2 bone fish needles. This is a tentative identification as these are somewhat different from specimens previously described. One is flat with a large, drilled hole and line groove at the proximal end (Pl. V, 14). The other is scored for lashing and has a lashing knob (Pl. VI, 6).

TOOLS AND MANUFACTURES

2 crudely made snow knives and one snow knife fragment of bone.

1 bone snow shovel blade fragment has a deep groove to receive a wedge-shaped handle and a number of lashing holes (Pl. V, 1).

1 mattock head is made from a whale rib and has a series of lashing grooves near the proximal end. The specimen is slightly curved and on the concave side, there is a flattened area to aid in hafting.

3 bone end-bladed knife handles.

1 side-bladed knife handle of bone.

1 composite knife handle half of bone.

1 fragmentary slate blade with a broad tang for insertion into an ulu handle.

1 whetstone fragment.

1 meat or boat hook of bone is crudely made. There are three horizontally placed holes for lashing and opposite them are lashing grooves. The implement has a flattened face for attachment to a wooden shaft (Pl. V, 5).

TRANSPORTATION

5 bone sledge shoe sections. These vary in width from 3.1 cm. to 4.5 cm. and are similar to previously illustrated specimens from the Levesque Harbour site with one exception. This is a section which, instead of having only drilled holes for pegging to the runner, has a pair of drilled holes connected by a thin, deep groove for lashing to the runner (Pl. V, 7). One of the other sections has two bone pegs still in place.

SKIN WORKING AND TAILORING

1 fragmentary needle case of bone. Rectangular in shape, the specimen has an engraved line running around one edge (Pl. V, 13).

1 small ivory thimble holder (Pl. VI, 22).

2 tentatively identified awls. One is a sharpened bone fragment with a suspension hole at the proximal end (Pl. V, 12). The other is a small bird bone which has been sharpened at one end. The other end still shows the articular surface, and a hole has been drilled through there at the thinnest point (Pl. VI, 28).

PERSONAL ADORNMENT

26 drilled teeth from a small mammal, strung on a sinew line. Although the stringing apparently was done after the material was excavated, it is likely that the teeth are all from the same necklace or amulet.

1 ivory comb. The specimen had an indeterminate number of teeth, all of which are missing or broken. It has a handle, the sides of which curve in and then out. A wedge-cut at the end of the handle gives a bifurcated outline. Decoration on this specimen consists of engraved parallel bands running around the handle on both sides. At intervals, paired spurs extend inward from one line and outward from the other. There are also crude "stick" human figures engraved on one side (Pl. V, 15).

DORSET CULTURE

5 antler harpoon heads, three of which are broken. Two broken specimens appear to belong to Collins' open socket type B-1 (a) although the identification is uncertain because the tangs are broken (Pl. V, 10). Two complete and one broken specimens belong to the open socket type B-1 (b) category with line hole at the centre, above the socket, and a bifurcated base (Pl. V, 11; Pl. VI, 24).

1 fragmentary antler adze head. The specimen has a narrow groove for a stone blade and appears to have been bell-shaped or at least to have flared at each side near the blade end (Pl. V, 21).

1 thin, retouched, chert micro-blade (Pl. VI, 26).

3 narrow, thin implements, two of antler and one of wood, may be tentatively identified as handles or heads for engraving tools. The two anter specimens have slender grooves in the distal end, possibly to receive a small micro-blade or spall, as well as lashing grooves and knobs. Both are scored at the proximal end suggesting some further attachment (Pl. VI, 4–5). The wooden specimen has four protruding knobs circling the implement near its centre. A small notch has been cut at what appears to be the distal end (Pl. VI, 3). The identification of this implement type and its inclusion in the Dorset assemblage should be considered very tentative.

1 copper harpoon blade, triangular in shape, with a concave base. There is a small hole just above the base (Pl. V, 3). The inclusion of this implement in the Dorset assemblage should also be considered tentative.

2 ivory figurines in the shape of seals. One is extremely well made and has the typical Dorset decoration consisting of a line running along the back of the specimen with short lines radiating out from it (Pl. VI, 32). There are also a series of parallel lines along both sides of the figure. The second seal figurine has a hole through it in the centre, perhaps for suspension. This specimen is more crudely made, and the head is missing (Pl. VI, 33).

3 tang ends of unidentified antler implements have gouged line and reinforcing holes that associates them with the Dorset culture (Pl. VI, 25). One is wedge-shaped with a gouged line hole on one side of the implement (Pl. V, 8). The distal end has been reworked to spatulate shape but the implement may originally have been a bladder dart head or perhaps a harpoon foreshaft.

ANALYSIS

As might be expected, nearly all the Thule culture artifacts can be duplicated from the Naujan site. Those that cannot are the bifurcated comb, the rectangular needle case and the snow shovel. Scapula snow shovels of the same general type as the illustrated specimen from the Nudlukta site are common in eastern Thule sites (Mathiassen, 1927, II, p. 67). Hair combs of various shapes are widespread throughout the Eskimo area but specimens with bifurcated handles are generally more western in their distribution, having been found at Point Atkinson east of the mouth of the Mackenzie River (Mathiassen, 1930, Pl. 4, 8), and in western Thule sites in Alaska (Giddings, 1952, pp. 88–89; VanStone, 1955, p. 119). Rectangular needle cases also have a more westerly distribution (Boas, 1908, Pl. XXIX, 4–5; Mathiassen, 1930, p. 61; Murdoch, 1892, p. 320).

It is not to be expected that the small Dorset collection from the Nudlukta site will contribute much to the solution of the many problems that surround the Dorset culture. However, it is at least possible to document the existence of another site with Dorset manifestations, and to suggest that although this small collection seems to represent a developed Dorset culture, it is possibly earlier than such typically late Dorset sites as T-2 on Southampton Island (Collins, 1956, pp. 30–31) and Mill Island (O'Bryan, 1953). This opinion is based mainly on the resemblance between the Dorset collection from the Nudlukta site and the bone and antler materials from Collins' Crystal II site in Frobisher Bay. This resemblance is particularly noticeable with regard to the general absence at both sites of the heavy, thick, closed socketed form, type B-2 (a), which Collins considers late (1950, p. 21). A further indication of the developed nature of the Dorset collection at the Nudlukta site is the occurrence of the characteristic incised decoration.

The Fort Ross Site

The Fort Ross site receives its name because of its location near the site of an abandoned Hudson's Bay Company post in Brentford Bay. More precisely, the site is situated on a peninsula that extends out from the southeast end of Somerset Island very close to the east entrance to Bellot Strait. Like the Nudlukta site, the materials from this site represent a mixture of Dorset and Thule types. The artifacts were excavated from five houses and, according to Mr. Learmonth's notes, it appears that a good many of them were picked up on or near the surface.

THULE CULTURE

9 sledge shoe fragments with drilled holes for pegging to the runner.

3 small soapstone fragments, probably from lamps.

1 bone mattock head, broken at the distal end and provided with three lashing grooves and a wide, flat, scored face for attachment of the handle.

3 antler arrowheads. Two have single barbs and plain, conical tangs with a slight bulge (Pl. VII, 4). The other has no barbs, and a sharp shouldered tang with two opposite knobs.

1 antler sinew twister is broken, but presumably terminates at either end in shallow lips on opposite sides (Pl. VII, 3).

1 oblong piece of wood, round in cross section, which may be a shaft for a bow drill (Pl. VII, 1).

4 foreshafts of bone for throwing harpoons. One specimen is conical at both ends and has a centrally placed, drilled line hole. The other is also conical at both ends but the line hole is a narrow slit placed near one side of the specimen (Pl. VII, 2).

1 bone trace buckle.

1 whetstone.

2 pendants. One is a polar bear tooth with a drilled suspension hole (Pl. VII, 5). The other, an ivory specimen, is drop-shaped with a suspension hole at one end and two pairs of incised, parallel lines running around the specimen (Pl. VII, 14).

2 antler harpoon heads. One belongs to the Thule type II category while the other has a closed socket, single dorsal spur, and blade slit running parallel to the line hole.

1 ivory comb. The specimen is broken at the proximal end but there was a hole for suspension. There are also eleven other small holes in the comb suggesting that it might have been worn fastened in the hair. Two teeth are broken (Pl. VII, 7).

1 wooden doll partly burned and badly decayed (Pl. VII, 9).

5 brow band fragments of antler. Three are decorated with parallel incised lines (Pl. VII, 10, 16). Another has two sets of parallel lines, each pair being interspersed with sets of three, short, vertical lines (Pl. VII, 18). The fifth specimen has two parallel lines running along the edges with vertical spurs at short intervals (Pl. VII, 11). Two specimens have holes for the thong that would fasten the band around the head.

1 figurine fragment of ivory that appears to be in the shape of a whale's tail (Pl. VII, 15).

1 bladder mouthpiece of ivory has a wide lashing groove around its circumference (Pl. VII, 6).

DORSET CULTURE

1 antler harpoon head. The specimen has a closed rectangular socket, double line hole at right angles to the socket, and no blade. It thus belongs to Collins' closed socket type B-1 (b) (Pl. VII, 13).

2 copper harpoon blades roughly triangular in shape (Pl. VII, 17) are tentatively included in the Dorset assemblage.

1 polished jadeite fragment. Possibly part of an adze or scraper blade.

1 harpoon dart head of ivory. The specimen is broken at the tip, has opposite barbs and a sloping shoulder with a bulging, conical tang. An oblong line hole is located off-centre near the tang (Pl. VII, 12).

1 scraper blade of basaltic material is discoidal in shape at one end and may have been hafted as a two-handed scraper or beaming tool (Pl. VII, 8).

ANALYSIS

The collection from the Fort Ross site is too small to allow significant generalizations. All the Thule specimens with the exception of the closed socket harpoon head with blade slit running parallel to the line hole duplicate Naujan types. As previously indicated with regard to a specimen in the Levesque Harbour collection, this latter form is rare in eastern Thule sites and more characteristic of those in the west. The Dorset culture artifacts are equally unrevealing. The closed rectangular socket type B-1 (b) harpoon head has been described from a number of Dorset sites (Collins, 1950, p. 21; O'Bryan, 1953, Pl. VII, d; Holtved, 1944, I, Pl. 1, 3). Scraper blades of the size and shape of the one from the Fort Ross site have not been reported from other Dorset sites. However, the specimen bears some resemblance to forms from the T-1 site on Southampton Island (Collins, 1956, Pl. IX, 5) and from Inuarfigssuak, northwest Greenland (Holtved, 1944, I, Pl. 2, 28–29).

Thom Bay Grave

The artifacts described here were found by Eskimos a little west of Thom Bay on the Boothia Isthmus in a grave beside which lay a wooden leg, said to have been made by the carpenter of the *Victory* in 1830 for an Eskimo who visited the ship. This event is closely associated with the first meeting between Eskimos and white men in this area which has already been described.

It will be recalled that the original encounter took place on January 9, 1830, when a group of thirty-one Eskimos visited the ship. The following day Captain Ross and some members of his crew visited a nearby Eskimo village and on January 11, more Eskimos visited the ship including a lame man who wished to see the ship's doctor. He had lost his leg as a result of an encounter with a polar bear and was pulled about on a sledge (Ross, 1835, pp. 253–54). "The morning was clear, but cold, with the thermometer at minus 35°, while, expecting our new friends, we did not go out. At one o'clock the man who had lost his leg, whose name was Tulluahiu, arrived, with another, very intelligent native, called Tiagashu, drawing him on a sledge. On examining the stump, the surgeon found it a sound one, long healed, while, the knee being bent, there was no difficulty in applying a wooden leg. The carpenter was therefore sent for to measure him; while, anticipating the purpose, he expressed the greatest delight" (p. 254). These two men drew a map of the surrounding country for Ross. "We explained that the new leg would be ready in three days, when we hoped for the pleasure of trying it on; and then, presenting them each with one of the empty meat canisters, they took their departure in high glee" (p. 257).

On January 15th the one-legged man returned to the ship for his new leg. "The promised leg being now complete, was fitted on; and there was little time lost in finding its use and value; as the disabled person soon began to strut around the cabin, in apparent ecstasy; with more reason certain to be delighted with his present, than all the others united, with what they had received". (p. 264).

We learn nothing more about Tulluahiu from Captain Ross's narrative except that he was still alive at the time of the last contact between the Eskimos and the explorer's party during the winter of 1831–32. It seems safe to assume, however, that he died within ten years. At least he had been dead for some time when M'Clintock inquired for him in March, 1859 (M'Clintock, 1859, p. 233). This gives an approximate date for the materials from his grave. The wooden leg was not collected.

4 harpoon heads. Three have a single bifurcated spur, closed socket and inserted iron blade parallel to the line hole and held in place by a copper rivet. One specimen also has lashing holes (Pl. VIII, 20). The fourth harpoon head has a single spur, closed socket and lashing holes. There is no blade but the distal end is flattened and has sharp edges (Pl. VIII, 19).

3 large dart heads of antler. All have powerful opposite barbs but in two of the specimens, these are separate pieces that have been inserted into holes in the body of the implement. One is broken at the proximal end but appears to have had a split tang (Pl. VIII, 1). The other two are obliquely cut at the proximal end and have small holes for metal tacks (Pl. VIII, 2). In one specimen, a tack is still in place.

2 wooden models of kayaks, both with characteristic angled bow and stern which is still used in this area (Pl. VIII, 25).

2 lance heads. One has a large iron blade held in place by a copper rivet (Pl. VIII, 15). The other has no blade but is notched at the distal end to receive one. There are three vertically placed lashing holes, all of which have narrow lashing grooves running off them (Pl. VIII, 9). This suggests that the blade was lashed on rather than riveted. Both specimens have thinned tangs scored for lashing with a rivet hole to give added strength.

1 ivory sinew twister (Pl. VIII, 24).

2 spear or arrow points, one of copper and the other of iron. Both are blunt and their exact use must be considered indefinite. The copper specimen has a long, thin tang (PL. VIII, 12–13).

1 bone lance blade with narrow tang and three small, vertically placed holes for attachment to the lance head (Pl. VIII, 14).

20 arrowheads, six of bone and fourteen of antler, can be divided into six types.

Type 1—Three specimens have sloping shoulders and plain, conical tangs. The distal end is flattened and widened to form a blade (Pl. VIII, 4).

Type 2—Three arrowheads have a similar blade but have obliquely cut tangs and are slightly notched and scored for hafting (Pl. VIII, 5).

Type 3—Six specimens have sloping shoulders and plain, conical tangs with an iron blade held in place by a small copper rivet (Pl. VIII, 7).

Type 4—Four have tangs similar to type 2 but are equipped with iron blades held in place by copper rivets (Pl. VIII, 3).

Type 5—A single specimen is extremely thin, has no differentiated tang, and has a flattened, pointed tip with two projecting barbs, one of which is broken (Pl. VIII, 6).

Type 6—Three specimens are distinguished by the fact that they are very short. Two have tangs similar to type 1 while the third arrowhead resembles type 2 in this respect. All are equipped for metal blades although the blade is missing in one specimen (Pl. VIII, 10).

1 large brass fish hook with fragment of sinew line (Pl. VIII, 18).

1 antler fish spear centre prong is obliquely cut at the proximal end, and barbed on one side (Pl. VIII, 23).

2 small leister prongs of bone. Both are obliquely cut at the proximal end, and have a single barb at the distal end (Pl. VIII, 22).

1 salmon harpoon head (Pl. VIII, 17).

2 shafts for bow drills, one of bone and the other of antler. Both have iron drill bits inserted in one end (Pl. VIII, 8).

2 bone marrow extractors similar to those used by the modern Netsilik Eskimos. Both specimens are thin and are widened at one end into a triangular, hollow bowl. One specimen has three incised lines just below the bowl (Pl. VIII, 11).

1 bone knife, broken at the tip and with a hole for suspension at the proximal end (Pl. VIII, 16).

1 broken bone blade, possibly the distal end of a knife.

1 toy knife of bone with flattened blade and drilled hole for suspension at the proximal end (Pl. VIII, 21).

ANALYSIS

Nearly all the artifact types from the Thom Bay Grave can be duplicated from the Malerualik grave collection secured by Knud Rasmussen on the south coast of King William Island (Mathiassen, 1927, I, pp. 325–27, Pl. 85). There is no doubt that the Thom Bay collection belongs to the recent Netsilik Eskimo culture. However, the presence of large amounts of iron suggests that this grave find is younger than the Malerualik grave. Since the grave appears to have been that of an individual closely associated with the Ross expedition, there seems to be no doubt that the iron was obtained from the crew of the *Victory*, or from the ship itself after it was abandoned.

Throughout the winter and spring of 1829–30 the crew and officers of the *Victory* were constantly in touch with the Eskimos who provided many services for them including hunting and guiding of sledge expeditions. For this work they were always paid in objects of metal and this was of the greatest significance to the implement culture of these people. In fact, Rasmussen mentions that as late as 1923 the Eskimos were still obtaining iron from one of the Ross expedition's winter quarters at Victoria Bay. The impact of the Ross expedition on Eskimo material culture impressed Rasmussen considerably and he states that " . . . the population right from Committee Bay to Hudson Bay and to Back River, from King William's Land to Kent Peninsula have had implements of wood and iron that could definitely be traced back to the John Ross expedition" (Rasmussen, 1931, p. 27).

Of particular importance with regard to the materials from the Thom Bay grave, as well as the other Netsilik material in the Learmonth collection, is its relation to the Thule culture. This problem will be discussed in the concluding chapter.

The Spence Bay Site

The exact location of this site is not stated except that it is somewhere in the vicinity of Spence Bay. Since it presumably represents one of the larger population concentrations of Netsilik Eskimos in the area, the site may be the one called "Neitchillee" by Ross who visited there in June, 1830 and which is located on the shores of Netsilik Lake. "The name Neitchillee is equally given to the land, the river, the lake, and the village, or settlements of the natives. There were here houses for both seasons: the usual snow huts, namely amounting to twenty-one, and the summer houses, some of which had circles of stones nearly three feet high, forming a group of thirty. The largest of these was an oval of fourteen feet by twelve. The surface was here covered by the bones of the animals which the inhabitants had eaten" (Ross, 1835, p. 389). Rasmussen mentions that this lake has given its name (*näcilik*) to the whole of the Netsilik tribe because it is an extremely important area for food. The surrounding country contains many caribou, and seals sometimes run up into the lake, presumably by way of Willerstedt Inlet and the Netsilik River (Rasmussen, 1931, pp. 93–94).

Much of the material from this site, to judge from the lichen growth on many specimens, was picked up on the surface. The artifacts are described below under appropriate cultural headings.

SEA HUNTING

14 harpoon heads, all of bone with the exception of one brass specimen. Six belong to Mathiassen's Thule type 1 with no barbs or blade slit, a single spur, and lashing holes (Pl. X, 1–2, 6). Another specimen has a single barb, open socket, a single spur, lashing holes and is thus similar to Thule type II (Pl. X, 7). Two harpoon heads belong to Thule type III. One of these has a bone blade held in place by a peg of the same material, Pl. X, 5) and both have two sets of holes opposite the blade slit for fastening the blade (Pl. X, 9). A single, unfinished specimen has a closed socket, single bifurcated spur and blade slit parallel to the unfinished line hole (Pl. X, 4). Two heads have open sockets, lashing holes, a single spur and, instead of a blade slit, a thinned bed for the blade which would be held in place by bone pegs. One of these also has a drilled hole below the blade bed with a groove running to the hole above it, suggesting that the blade may have been lashed as well as pegged to the harpoon head (Pl. X, 10). A single specimen is made of brass with the blade apparently made from a steel knife. The name Sheffield is plainly visible on the blade and the head itself has a single, bifurcated spur,

closed socket and blade slit running parallel to the line hole (Pl. X, 11). Another specimen is very long and thin with a single barb and an open socket with a sunken bed for the lashing (Pl. X, 3).

1 ivory harpoon blade is flattened on both sides and has three vertically placed holes for pegging to the harpoon head (Pl. X, 8).

3 bone implements are tentatively identified as heads for bladder darts or similar barbed harpoons. One specimen has a closed socket and line hole (Pl. IX, 15) while another has a wedge-shaped tang and small, round line hole (Pl. IX, 10). The third specimen appears to be unfinished or is broken at the proximal end. All have powerful opposite barbs.

1 lance head consists of two intermediate pieces of bone for fixing between the shaft and the lance blade. A section of the shaft remains and is wedge-shaped. The two pieces that make up the head are fastened to the shaft on either side with copper rivets that extend completely through. At the distal end are two large holes, presumably for rivets to hold the blade in place (Pl. IX, 3).

2 harpoon ice picks of bone are obliquely cut at one end and scored for lashing. They are similar to previously illustrated specimens.

1 pair of wooden snow goggles, broken at both ends (Pl. X, 33).

1 small wooden wound plug is pointed at one end and has a narrow groove and knob at the other (Pl. X, 21).

2 bone socket pieces are small and presumably for bladder darts or similar light harpoons. Both taper to a wedge-shaped tang and have holes for pegging to the harpoon shaft (Pl. IX, 7; Pl. X, 15).

LAND HUNTING

1 bone arrow shaft straightener (Pl. IX, 1).

4 arrowheads of bone. One complete specimen has a flattened blade, is obliquely cut at the proximal end and grooved for lashing to the shaft. This specimen is similar to the type 2 specimens illustrated from the Thom Bay grave. Another complete head has flattened blade with two small opposite barbs and a plain, conical tang (Pl. X, 29). An incomplete specimen shows only the distal end with a metal blade held in place by a copper rivet. An unusual specimen may be an arrow blade rather than a head. It has an oddly shaped split tang with notches on either side and a drilled hole immediately above the tang that may have been for a rivet (Pl. X, 16).

FISHING

14 fish spear side-prongs of bone. They are similar to those described from the Levesque Harbour site but show a greater variety of form. On twelve specimens the proximal end is complete and in every case is obliquely cut for lashing to a shaft (Pl. IX, 4). Three

specimens have small lashing knobs (Pl. IX, 5), while two have drilled holes as well as lashing knobs so that the prong can be pegged on (Pl. IX, 6). All specimens were meant to contain pointed bone barbs and in one side prong, the barb is still in place (Pl. IX, 6). Two side prongs have drilled holes for bone pegs to hold the barb in place and in one of these the bone peg can still be seen.

2 bone barbs for fish spears with rounded tang for insertion into the type of side prong described above (Pl. X, 23).

4 side prongs for leisters, two of bone, one of antler and one of wood, are similar to those from the Thom Bay grave except that one has a separate inserted barb at the distal end (Pl. X, 22) and another, the wooden specimen, has an iron barb. The proximal end of this leister prong is thinned for attachment to a shaft and has a drilled hole for a peg (Pl. X, 12).

4 fish hooks, three of bone and one of ivory. One specimen has an iron hook still in place (Pl. X, 26) and all have drilled holes at one end for attachment to the line.

3 oval-shaped pieces of bone have multiple drilled holes and may have served as lures or possibly as weights for fishing lines (Pl. X, 28).

2 barbed, bone salmon harpoon heads similar to the illustrated specimen from the Thom Bay grave.

2 tentatively identified fish needles of bone. One specimen is constricted at the proximal end and there is a small knob with a line hole. The distal end is spatulate (Pl. X, 24). Another specimen is pointed at one end with a line hole at the other.

TOOLS AND MANUFACTURES

1 marow extractor of bone is similar to those from the Thom Bay grave.

2 bone spatulate specimens are tentatively identified as another form of marrow extractor. This identification is based on illustrations in Mathiassen (1928, Fig. 98), and Boas (1907, Fig. 148). Both specimens have holes for suspension at one end (Pl. X, 13).

1 bone handle is probably for a snow knife. There are drilled peg holes to hold the blade, and one of the pegs is still in place (Pl. IX, 9).

3 pointed, flattened sections of bone are probably knife blades, perhaps for snow knives. Only one is complete and it has drilled holes for attachment to a handle (Pl. IX, 2).

1 bone knife has a small metal blade and a suspension hole drilled in the proximal end. The blade is held in place by a small copper rivet (Pl. X, 14).

3 drag line handles, two of bone and one of wood, are all different. One bone specimen has a rectangular hole in the centre for the line Pl. IX, 12), while the other bone implement is pointed at each end and has a centrally located line groove (Pl. X, 32). The wooden

specimen is small, roughly triangular in shape with a centrally located line hole and groove (Pl. X, 31). The latter two may be associated with dog transportation and have been used as toggles on tow lines.

1 bone scraper blade is concave in cross section and sharpened at the distal end. There is a drilled hole in the proximal end and the blade was probably inserted into a handle (Pl. IX, 11).

1 round piece of bone with a deep, drilled hole in the centre is a snow probe handle (Pl. X, 25).

2 bone drill shanks, probably for hand drills. Both have blade sockets at one end with lashing beds and knobs. One has a lashing bed and drilled hole at the proximal end for attachment to a handle (Pl. IX, 14), while the other is wedge-shaped and has drilled holes for a similar purpose (Pl. X, 20).

1 soapstone cooking pot is rectangular in shape and complete except for a piece missing from the bottom. The specimen has been repaired at each end with copper wire and wider sections of copper. In one place a piece of wood has been inserted after being shaped to fit the area left by the missing fragment. At each of the four corners are drilled holes so that the pot can be suspended over a cooking lamp. The vessel has been made from a single piece of soapstone. It is 17.6 cm. in length, 10.3 cm. in width and 8 cm. in depth (Plate XI).

PERSONAL ADORNMENT

1 ivory comb has a long shank and five short teeth, two of which are broken (Pl. X, 30).

2 small pendants. Both are made from the teeth of a small mammal and have suspension holes drilled in one end (Pl. X, 27).

TOYS OR MODELS

3 toy soapstone lamps. One is unfinished and all are roughly triangular in shape (Pl. X, 18–19).

1 crudely shaped model kayak of wood is pointed at each end and similar to specimens previously illustrated.

4 wooden boat models resemble umiaks. They are square at each end (Pl. IX, 8, 13).

1 unidentified specimen of wood may be a toy drag line handle. It is rectangular in shape rising to a high point in the middle where a line hole runs lengthwise (Pl. X, 17).

ANALYSIS

The materials from the Spence Bay site are all characteristic of recent Netsilik culture and little need be said by way of analysis except with regard to two artifact types. The salmon harpoon head, which occurs in the collection from the Thom Bay grave as well as in the Spence Bay site, although generally associated with the modern Netsilik Eskimos (Mathiassen, 1927, I, p. 218) where it was used for fishing in big rivers and was furnished with a bladder, is reported by Rasmussen as being absent from the culture (Rasmussen, 1931, p. 184). The implement had apparently been out of use for several generations when Rasmussen visited the country in 1923.

The presence of model boats that resemble umiaks in the Spence Bay collection raises the question of the occurrence of this form in the central arctic. According to Mathiassen, the umiak is not found among the central Eskimos in modern times although it was used by the whale hunting Thule culture (Mathiassen, 1927, II, p. 64). A type of skin boat has been reported among the Iglulik Eskimos but these seem to be copies of European whale boats or the whale boats themselves covered with skin owing to the scarcity of wood (Mathiassen, 1928, p. 96). It may be that the boat models from the Spence Bay site are copies of forms seen by the Eskimos and used by the various exploring parties in the area. However, the fact that the models have squared bows suggests that they are umiaks, and indicates a possible wider distribution in recent times for this form of boat than has previously been supposed.

Netsilik River Graves

These two graves, which are said to date between 1905 and 1910, were located on the south bank of the Netsilik River on the west side of Boothia Isthmus. The Netsilik River, which is an important area for fall salmon fishing (Rasmussen, 1931, p. 94), connects Willerstedt Inlet and Netsilik Lake.

The materials from the two graves are described separately below since one is said to be a woman's grave and the other a man's.

MAN'S GRAVE

7 bone arrowheads. Three resemble the Thom Bay type 2. Two specimens, one flattened at the distal end and the other with an iron blade held in place by a copper rivet, have wedge-shaped tangs (Pl. VI, 9). A single specimen resembles the Thom Bay type 6 (Pl. VI, 16). A single arrowhead with a conical tang has a heavy copper tip inserted into a round socket (Pl. VI, 11).

2 arrow blades. One is of copper, flattened and sharpened at the distal end. Another specimen of iron has been carefully sharpened and has a flat base (Pl. VI, 17).

5 heavily rusted iron fragments were doubtless intended to be worked into knife blades, drill bits, or arrow blades.

1 antler section with a piece of iron inserted in one end may have been used as a knife or, more likely, an engraving tool (Pl. VI, 10).

1 copper brow band, broken in the centre, has two small holes drilled at each end for thong attachment (Pl. VI, 31).

1 thin, narrow bone implement, spatulate at one end and with a small drilled hole at the other, may be a form of marrow extractor similar to the tentatively identified specimens from the Spence Bay site.

7 small wooden boat models. Six are pointed at each end like modern Netsilik Eskimo kayaks and are similar to previously illustrated specimens. A single specimen is considerably broader than the others and may have been intended as a model of a European style boat (Pl. VI, 8).

3 narrow sections of wood, round in cross section, are apparently arrow shaft fragments. Two still retain fragments of the sinew lashing which held the feathers in place. The third has a deep notch at one end into which the bow string was inserted (Pl. VI, 7).

4 bone toy or model knives. All have flattened blades and a drilled hole at one end. They are similar to the illustrated specimen from the Thom Bay grave.

1 bone barb for a salmon spear side prong is rounded at one end to fit into the drilled hole at the tip of a side prong.

2 toy snow knives of bone have flattened blades that narrow sharply to form the handles (Pl. VI, 30).

1 bone wound plug.

1 large dart head of bone is broken at the tang end and has powerful opposite barbs.

1 salmon harpoon head of bone, barbed on both sides, resembles the illustrated specimen from the Thom Bay grave except that it has an open socket directly below the line hole (Pl. VI, 29).

1 brass cartridge case, calibre .44-.40.

1 bone lance head has a narrow, rectangular tang and is obliquely cut at the blade end. A small rivet hole aided in hafting and presumably the blade was held in place by lashings (Pl. VI, 12).

WOMAN'S GRAVE

3 arrowheads of bone. Two specimens belong to the Thom Bay type 2 and one to type 3.

2 bone needle cases are semi-circular in cross section. Both specimens are decorated with sets of parallel lines running vertical to the greatest length of the cases (Pl. VI, 18).

1 soapstone toy lamp fragment.

3 tentatively identified bone marrow extractors of the type previously described from the Spence Bay site and the Netsilik man's grave. Two specimens have drilled holes at one end and are decorated, one with small dots and the other with a circle and dot motif (Pl. VI, 13–14). A third implement is plain and has no drilled suspension hole (Pl. VI, 15).

1 sharpened bone fragment appears to be an awl.

1 small bone knife handle or adze head flares markedly toward the blade end (Pl. VI, 19).

1 bone leister prong is obliquely cut at the proximal end and has a single barb at the distal end.

2 pointed objects of bone may be centre prongs for fish spears. One is flattened to form a narrow blade at the distal end and has a wedge-shaped tang (Pl. VI, 21), while the other is scored for lashing and has a slight knob at the proximal end (Pl. VI, 20).

ANALYSIS

There is little to be said by way of analysis of the materials from the Netsilik River graves except that it is typical of recent Netsilik Eskimo culture and thus also resembles recent material culture throughout the central Eskimo area. The items from the two graves are not markedly different even though one is said to be a man's grave and the other a woman's. The needle cases, marrow extractors, awl and toy stone lamp might be thought of as being primarily associated with women's activities but all of these items, with the exception of the needle cases, are also found in the man's grave. Arrowheads were found in the woman's grave as well as fishing equipment. Women take part in the latter activity, but do not normally hunt caribou or other animals (Rasmussen, 1931, p. 173, opp. p. 198).

CONCLUSIONS

There is little that can be added to what has already been said about the Dorset and Thule artifact types in the Learmonth collection. The Dorset material, which is not numerous, belongs to the developed phase of the culture and since it occurs in what is considered to be the area where the greatest number of Dorset sites are to be found (Taylor, 1959, p. 24), it adds little to our knowledge of Dorset distribution. The Thule material, as previously stated, most closely resembles the classic Thule site at Naujan in Repulse Bay. This is perhaps not surprising when the geographic homogeneity of the whole area is considered. It seems almost certain that the Thule peoples of Boothia Peninsula and Somerset Island relied less heavily than those at Naujan on the hunting of large sea mammals. Consequently, caribou hunting and fishing presumably played a larger part in their way of life, just as it does today for the Netsilik Eskimos. At any rate, even though the Thule collections obtained by Learmonth are relatively small compared to the large amounts of material excavated by Mathiassen, it is likely that the former represents a culture much less rich in artifact types, a situation that can be explained in terms of a much less favorable ecological setting. The Thule culture is first and foremost a sea mammal hunting culture and it stands to reason that, as it spread into areas where sea mammals were less abundant, it would become correspondingly changed and diluted.

In terms of generalizations about Eskimo culture, the recent Netsilik material in the Learmonth collection is perhaps the most rewarding. It represents one of the largest archaeological collections of recent materials from the area and because of its size and the diversity of artifact types, it lends itself to comparison with the Thule culture. This raises the question, first broached by Mathiassen, of the relationship between the Thule culture and the modern central Eskimo culture that followed it. It should be possible, on the basis of the Netsilik material described in the preceding pages, to make some contribution to this general problem.

Mathiassen, in his very understandable desire to establish conclusively the separate identity of the newly discovered Thule culture, emphasized the differences between this culture and that of the modern central Eskimos. He felt that the Thule culture was not only radically different from central Eskimo culture as influenced by European contact, but also from the relatively pure culture noted by Parry and other early explorers. This point is made numerous times in Mathiassen's report (1927, I, pp. 87–89, 326–27; II, pp. 162–63) and the similarities that do exist are explained as being basic attributes of Eskimo culture in general. With this firm distinction in mind it would be well to examine the Netsilik materials from the Learmonth collection with a view to determining which artifact types the two cultures hold in common, and which are distinctive of the recent Netsilik Eskimo culture. It has already been established that the Netsilik materials previously described, though not without traces of European influence, represent the culture as it existed at about the time of initial contact. The following is a list of Netsilik artifact types from the Learmonth collection that are duplicated in Thule collection from sites in eastern Canada and Greenland.

Harpoon head with single spur, closed socket, blade slit parallel to line hole, with or without lashing holes (Pl. VIII, 20).
Harpoon head, Thule type I (Pl. X, 1–2, 6).
Harpoon head, Thule type II (Pl. X, 7).
Harpoon head, Thule type III (Pl. X, 5).
Ivory harpoon blade (Pl. X, 8).
Harpoon ice pick.
Snow goggles (Pl. X, 33).
Wound plug (Pl. X, 21).
Socket piece for bladder dart or similar light harpoon (Pl. IX, 7; Pl. X, 15).
Drag line handle (Pl. IX, 12; Pl. X, 31–32).
Fixed lance head (Pl. VIII, 9, 15).
Bone lance blade (Pl. VIII, 14).
Arrowhead, Thom Bay type 1 (Pl. VIII, 4).
Arrowhead, Thom Bay type 3 (Pl. VIII, 7).
Arrowhead, Thom Bay type 6 (Pl. VIII, 10).
Sinew twister (Pl. VIII, 24).
Barbed fish spear centre prong (Pl. VIII, 23).
Leister prong with single barb (Pl. VIII, 22).
Fish needle (Pl. X, 24).
Weights or lures for fishing lines, roughly fish shaped (Pl. X, 28).
Fish hook with perpendicular bone body and projecting hook (Pl. X, 26).
Fish spear side prong with drilled hole for the barb (Pl. IX, 4–6).
Barb for above type of side prong (Pl. X, 23).
Wooden bow drill shaft (Pl. VIII, 8).
Spatulate marrow extractor (Pl. X, 13).

Snow probe handle (Pl. X, 25).
·Two-piece snow knife (Pl. IX, 9).
Concave bone scraper blade (Pl. IX, 11).
End-bladed knife (Pl. X, 14). (?)
Shank for hand drill or engraving tool (Pl. IX, 14; Pl. X, 20).
Triangular soapstone lamp without wick ledge (Pl. X, 18–19).
Rectangular soapstone cooking pot (Pl. XI).
Comb with rectangular shank (Pl. X, 30).
Tooth pendants from necklace or amulet (Pl. X, 27).
Flat, wooden kayak model (Pl. VIII, 25).
Wooden umiak model (Pl. IX, 8, 13).

The following traits are distinctive of recent Netsilik Eskimo culture and do not occur in Thule culture sites.

Harpoon head with single spur, closed socket, lashing holes no blade (Pl. VIII, 19).
Dart head with powerful opposite barbs inserted into holes in body of the implement (Pl. VIII, 1–2).
Iron or copper arrow or spear point with elongated, thin tang (Pl. VIII, 12, 13).
Harpoon head with open socket, lashing holes, single spur, blade bed (Pl. X, 10).
Bladder dart head with closed socket and line hole (Pl. IX, 15).
Bladder dart head with wedge-shaped tang (Pl. IX, 10).
Two-piece lance head (Pl. IX, 3).
Arrowhead, Thom Bay type 2 (Pl. VIII, 5).
Arrowhead, Thom Bay type 4 (Pl. VIII, 3).
Arrowhead, Thom Bay type 5 (Pl. VIII, 6).
Arrow shaft straightener (Pl. IX, 1).
Arrowhead or blade of bone with split tang (Pl. X, 16).
Brass fish hook (Pl. VIII, 18).
Salmon harpoon head (Pl. VIII, 17).
Marrow extractor with bowl (Pl .VIII, 11).
Bone knife with flattened blade (Pl. VIII, 16).
Copper brow band (Pl. VI, 31).

It will be noted that of a total of fifty-three Netsilik Eskimo artifact types, thirty-six bear a close relationship to eastern Thule forms. Of the remaining seventeen types that are distinctively Netsilik, one, the harpoon head with single spur, closed socket, lashing holes and no blade almost exactly resembles the Thule Type 1 harpoon head except for the closed socket. Two other types, the copper brow band and brass fish hook, derive from pre-contact Thule forms.

It is thus apparent that the relationship between the Thule culture and recent Netsilik Eskimo culture is a good deal closer than Mathiassen indicates. In fact, it does not seem to be an over-statement to say that Netsilik Eskimo implement culture is a logical development from the earlier ancestral period. It is of course true that the distinctive nature of the Thule culture cannot be denied. Its influence and great importance throughout the entire Eskimo area has been emphasized many times by many archaeologists. It appears that this heritage persists in the implement culture of the recent central Eskimo as well, and to a much greater extent than was previously believed. A re-examination of this relationship throughout the eastern Canadian arctic might add a new perspective to our understanding of the later developmental phases of Eskimo culture.

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PLATE I *The Levesque Harbour Site*

	Description	*Acc. No.*	*Ref. Page*
1.	Side prong for fish spear	949.120.41	12, 20
2.	Side prong for bird dart	949.120.144	12, 20
3.	Centre prong for fish spear	949.120.45	13, 20
4.	Side prong for fish spear	949.121.2	12, 20
5.	Side prong for bird dart	949.120.46	12, 20
6.	Centre prong for fish spear	949.121.40	13, 20
7.	Fish needle	949.121.20	13, 20
8.	Wound plug	949.121.50	11, 20
9.	Arrowhead	949.121.22	12, 20
10.	Tooth pendant	949.121.102	17, 21
11.	Barb for fish spear	949.121.69	13, 20
12.	Harpoon ice pick	949.120.143	11, 20
13.	Harpoon head	949.112.6	10, 20
14.	Harpoon head	949.121.30	10, 20
15.	Harpoon head	949.120.99	15, 20
16.	Harpoon head	949.113.8	10, 20
17.	Barb for fish spear	949.120.56	13, 20
18.	Harpoon head	949.113.11	10, 17, 20
19.	Bola ball	949.121.26	12, 20
20.	Bow drill mouthpiece	949.121.95	16, 21
21.	Harpoon head	949.113.9	10, 20
22.	Female figurine	949.120.20	17, 21
23.	Lamp fragment	949.121.90	16, 21

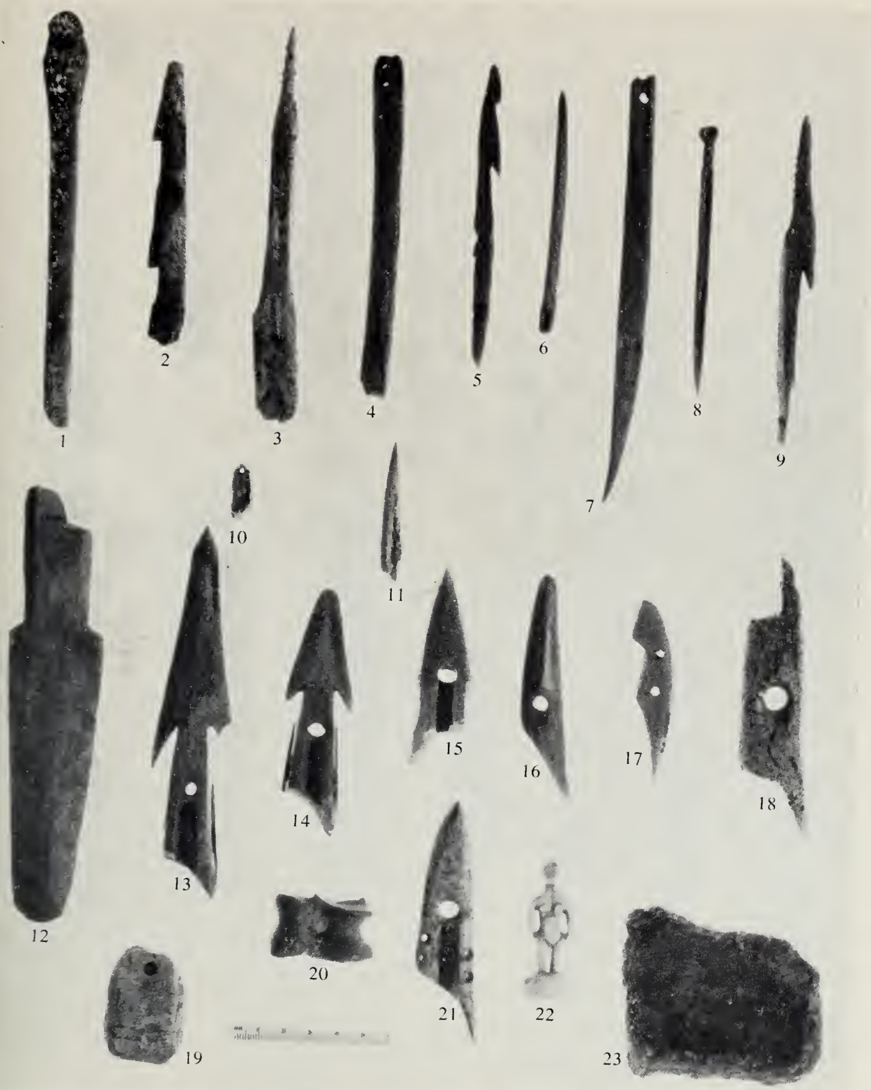


PLATE I *The Levesque Harbour Site.*

PLATE II *The Levesque Harbour Site*

	Description	*Acc. No.*	*Ref. Page*
1.	Side-bladed knife handle	949.118.15	14, 17, 21
2.	End-bladed knife handle	949.118.21	14, 20
3.	End-bladed knife handle	949.118.16	14, 20
4.	End-bladed knife handle	949.121.4	14, 20
5.	End-bladed knife handle	949.118.18	14, 20
6.	Side-bladed knife handle	949.120.123	14, 21
7.	Sledge shoe section	949.120.31	16, 21
8.	Composite knife handle half	949.120.127	14, 21
9.	Trace buckle	949.120.12	17, 21
10.	Harpoon socket piece	949.120.13	10, 20
11.	Lance head	949.121.6	11, 20
12.	Handle for a harpoon bladder	949.121.97	11, 20
13.	Harpoon ice pick	949.120.118	11, 20
14.	Harpoon socket piece	949.118.30	11, 20
15.	Harpoon foreshaft	949.120.108	11, 20
16.	Sledge shoe section	949.120.35	16, 21

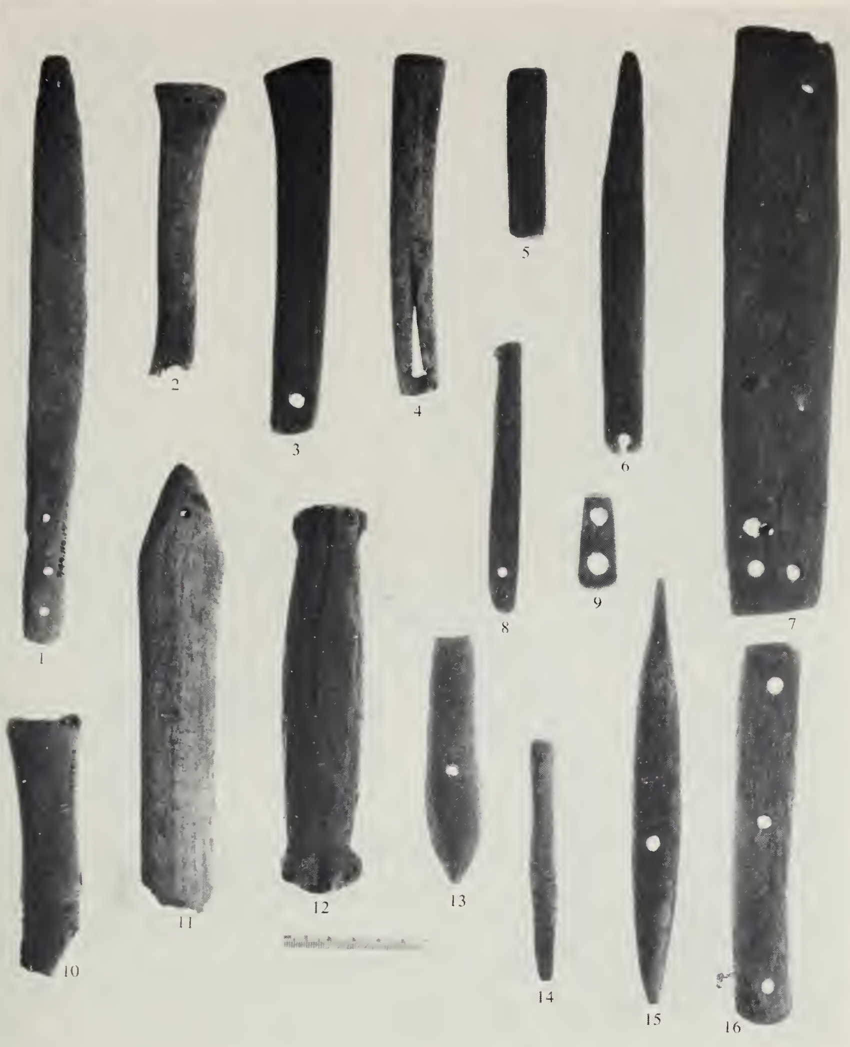


PLATE II *The Levesque Harbour Site.*

PLATE III *The Levesque Harbour Site*

	Description	*Acc. No.*	*Ref. Page*
1.	Mattock head	949.120.61	15, 21
2.	Wedge	949.120.66	13, 20
3.	Shovel blade	949.120.14	16, 21
4.	Ulu handle	949.120.120	15, 21
5.	Ulu handle	949.120.121	15, 21
6.	Snow knife	949.120.72	15, 21
7.	Adze head	949.113.18	13, 20

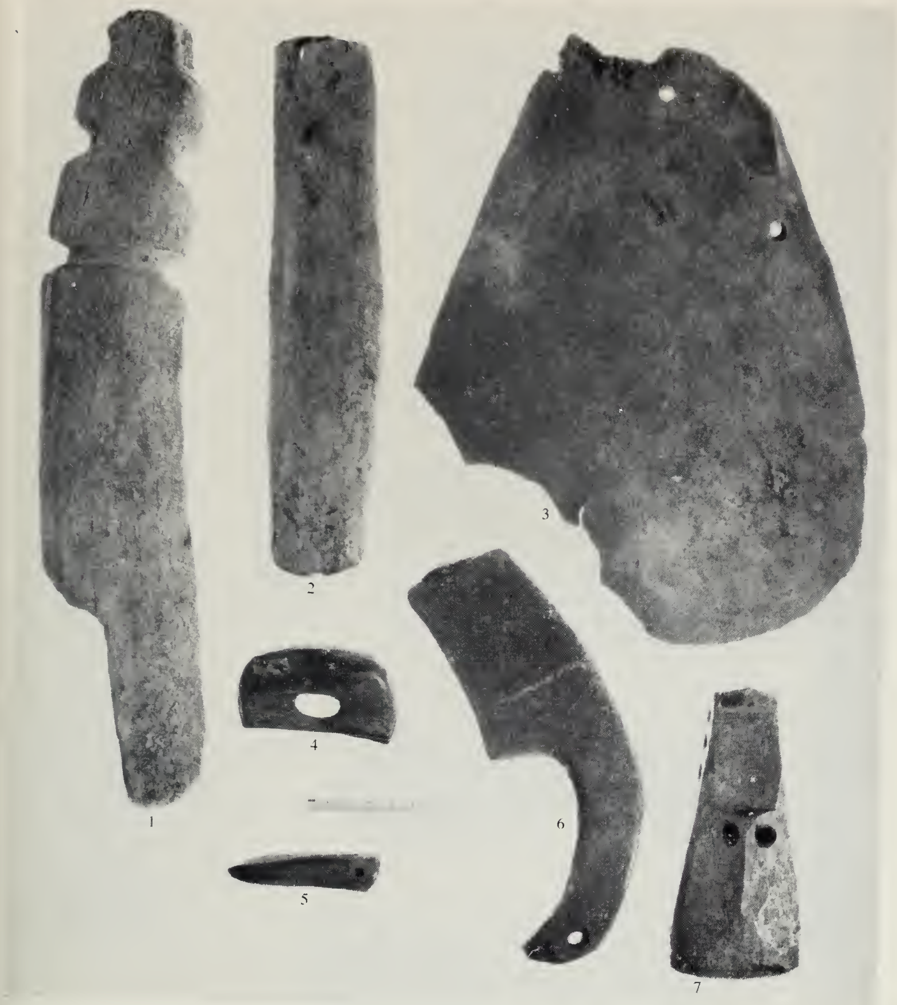


PLATE III *The Levesque Harbour Site.*

PLATE IV *The Creswell Bay Sites*

	Description	*Acc. No.*	*Ref. Page*
1.	Lance head	949.198.16	24
2.	Harpoon foreshaft	949.198.2	24
3.	Mattock head fragment	949.198.3	24
4.	Centre prong for fish spear		24
5.	Arrowhead	949.198.47	24
6.	Ulu handle	949.176.3	23
7.	Net sinker (?)	949.196.12	23
8.	Whetstone	949.196.15	23
9.	Spoon	949.196.9	23

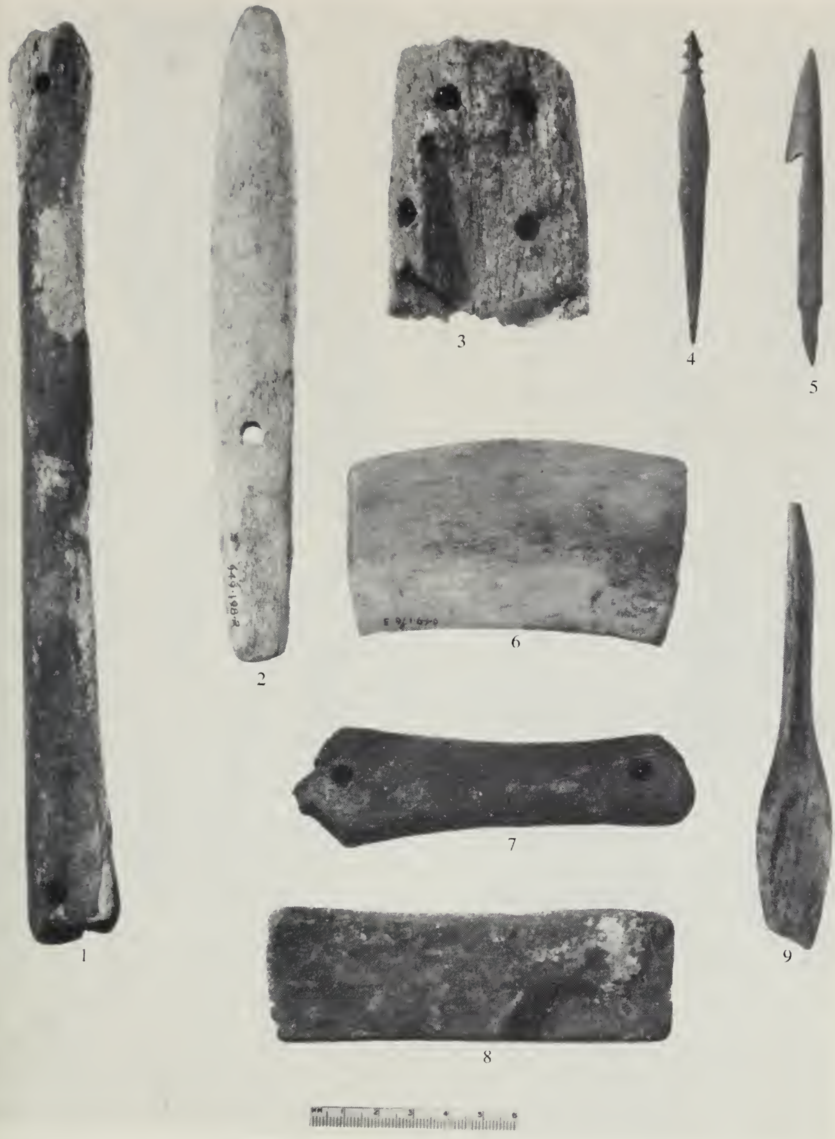


PLATE IV *The Creswell Bay Sites.*

PLATE V *The Nudlukta Site*

	Description	*Acc. No.*	*Ref. Page*
1.	Shovel blade	939.46.84	29
2.	Harpoon socket piece	949.110.3	27
3.	Harpoon blade	939.46.46	32
4.	Arrowhead	939.46.61	28
5.	Meat or boat hook	939.46.51	30
6.	Harpoon socket piece	939.46.63	28
7.	Sledge shoe section	949.110.4	30
8.	Unidentified fragment	949.114.6	32
9.	Harpoon finger rest	949.114.29	27
10.	Harpoon head	949.115.23	31
11.	Harpoon head	949.114.11	31
12.	Awl	939.115.21	30
13.	Needle case	939.46.43	30
14.	Fish needle	949.117.4	29
15.	Comb	939.46.70	31
16.	Wound plug	939.46.90	28
17.	Harpoon head	939.46.66	27
18.	Harpoon head	939.46.72	27
19.	Fish-shaped lure	949.116.4	29
20.	Fish-shaped lure	949.116.3	29
21.	Adze head	939.46.39	31

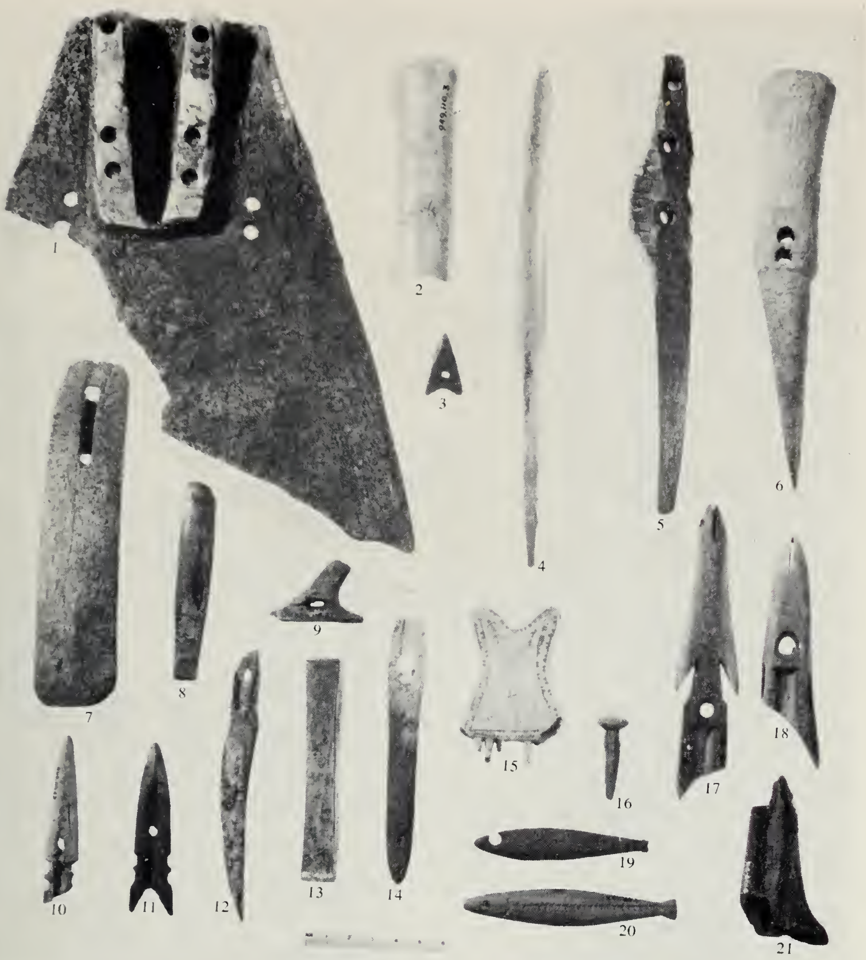


PLATE V *The Nudlukta Site.*

PLATE VI *The Nudlukta Site* AND *Netsilik River Graves*

	Description	*Acc. No.*	*Ref. Page*
1.	Toy seal scratcher	949.115.41	28
2.	Arrowhead	949.110.6	28
3.	Handle for engraving tool	949.117.20	32
4.	Handle for engraving tool	949.115.16	32
5.	Handle for engraving tool	949.114.13	32
6.	Fish needle	939.46.75	29
7.	Arrow shaft fragment	950.174.41	54
8.	Boat model	950.174.2	54
9.	Arrowhead	950.174.21	53
10.	Engraving tool (?)	950.174.19	53
11.	Arrowhead	950.174.22	53
12.	Lance head	950.174.16	55
13.	Marrow extractor (?)	950.173.4	55
14.	Marrow extractor (?)	950.173.13	55
15.	Marrow extractor (?)	950.173.1	55
16.	Arrowhead	950.174.23	53
17.	Arrowhead	950.114.56	53
18.	Needle case	950.173.11	55
19.	Knife or adze handle	950.173.19	55
20.	Centre prong for fish spear	950.173.16	55
21.	Centre prong for fish spear	950.173.17	55
22.	Thimble holder	939.46.91	30
23.	Barb for fish spear	939.46.60	29
24.	Harpoon head	949.115.22	31
25.	Unidentified fragment	939.46.47	32
26.	Micro-blade	939.46.49	32
27.	Barb for fish spear	939.46.45	29
28.	Awl	949.115.34	31
29.	Salmon harpoon head	950.174.39	55
30.	Toy snow knife	950.124.27	54
31.	Brow band	950.174.52	54, 61
32.	Seal figurine	939.46.28	32
33.	Seal figurine	939.46.40	32

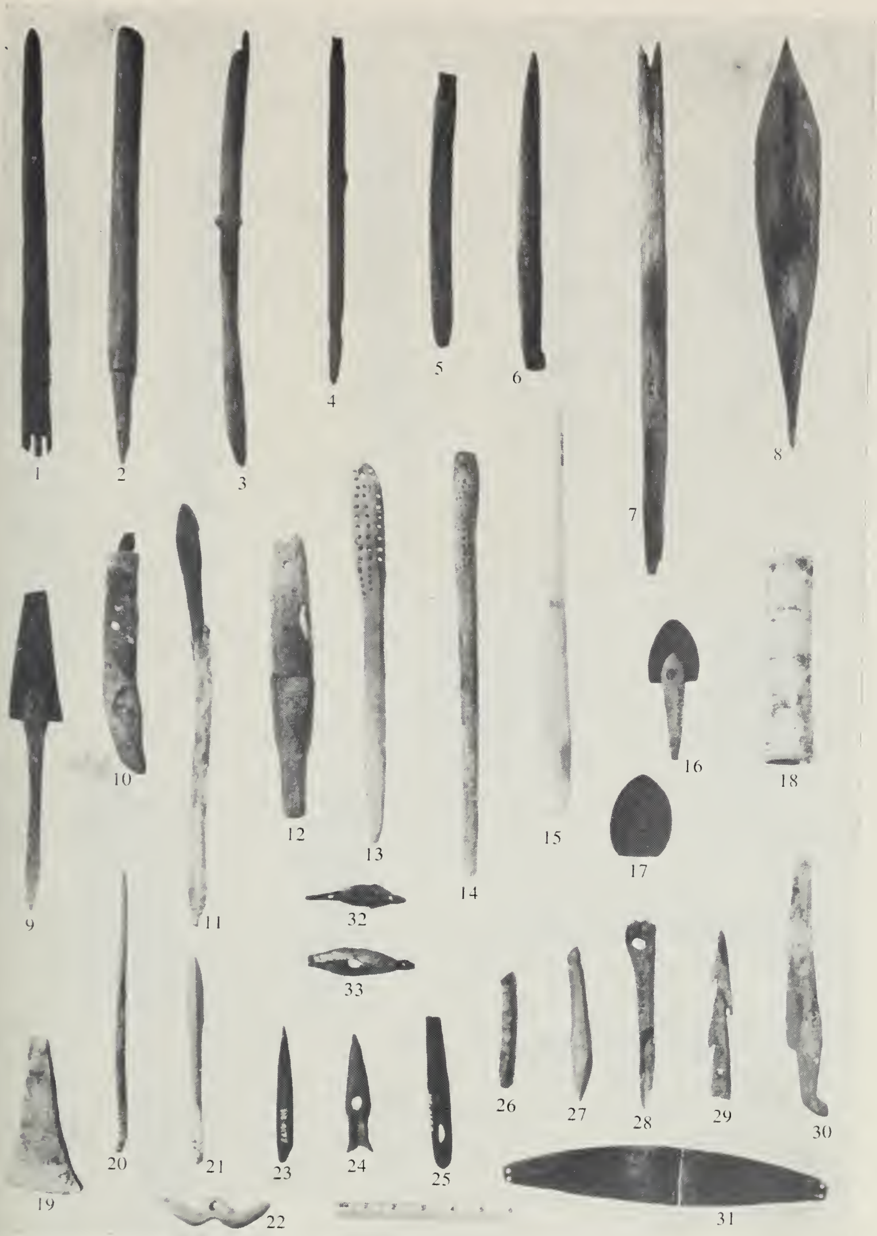
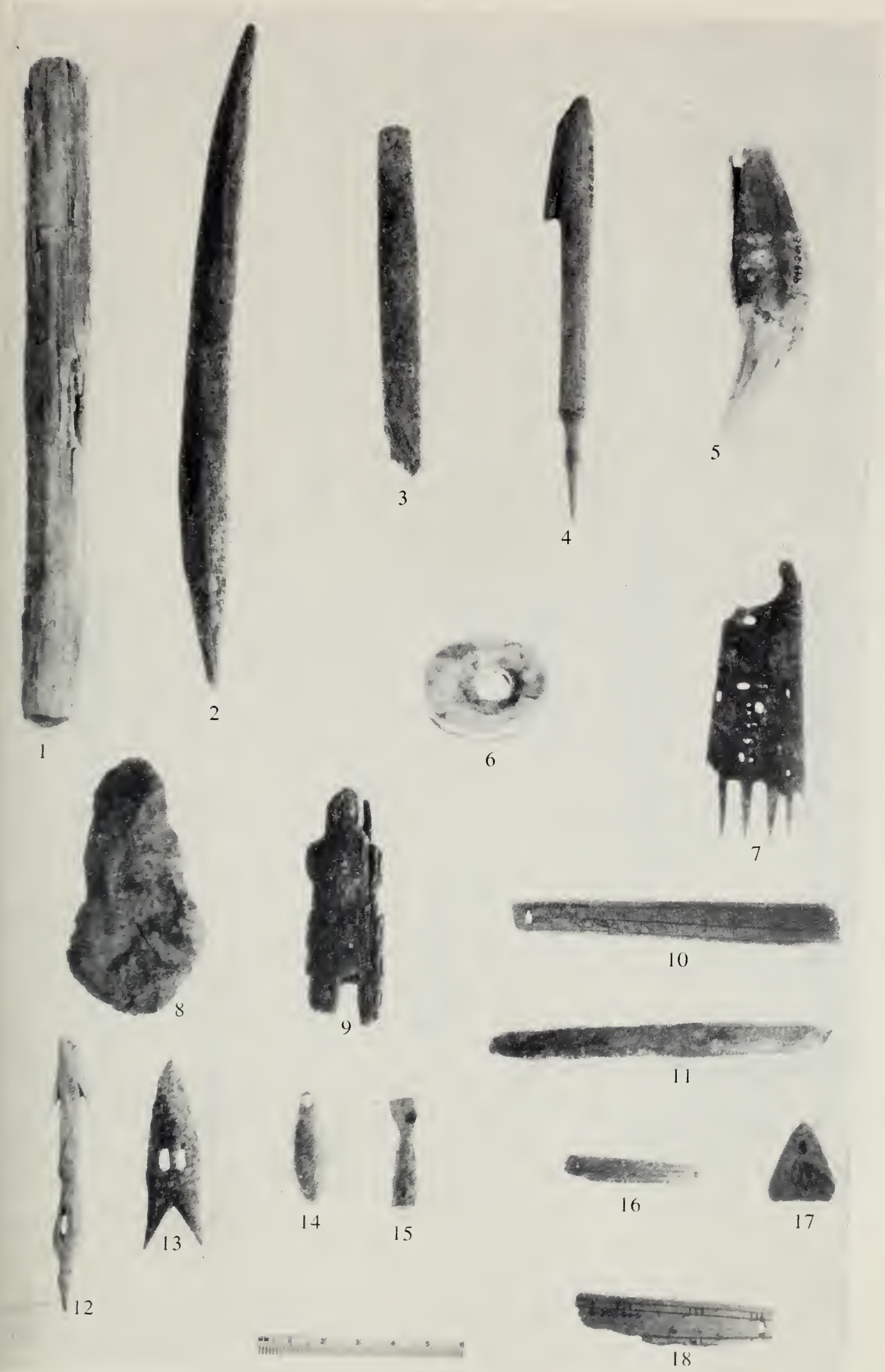


PLATE VI *The Nudlukta Site and Netsilik River graves.*

PLATE VII *The Fort Ross Site*

	Description	*Acc. No.*	*Ref. Pa*
1.	Bow drill shaft	949.203.3	35
2.	Harpoon foreshaft	949.201.13	36
3.	Sinew twister	949.201.14	35
4.	Arrowhead	949.206.6	35
5.	Pendant	949.201.8	36
6.	Bladder mouthpiece	949.206.1	37
7.	Comb	949.200.8	36
8.	Scraper blade	949.202.2	37
9.	Doll		36
10.	Brow band fragment	949.201.15	36
11.	Brow band fragment	949.200.6	36
12.	Harpoon dart head	949.201.9	37
13.	Harpoon head	949.200.13	37
14.	Pendant	949.206.4	36
15.	Figurine		37
16.	Brow band fragment	949.202.6	36
17.	Harpoon blade	949.200.23	37
18.	Brow band fragment	949.202.4	36



LATE VII *The Fort Ross Site.*

PLATE VIII *Thom Bay Grave*

	Description	*Acc. No.*	*Ref. Page*
1.	Dart Head	950.52.30	41, 61
2.	Dart Head	950.52.28	41, 61
3.	Arrowhead	950.52.55	42, 61
4.	Arrowhead	950.52.37	42, 59
5.	Arrowhead	950.52.38	42, 61
6.	Arrowhead	950.52.26	42, 61
7.	Arrowhead	950.52.48	42, 59
8.	Bow drill shaft	950.52.4	42, 60
9.	Lance head	950.52.8	41, 59
10.	Arrowhead	950.52.44	43, 59
11.	Marrow extractor	950.52.32	42, 61
12.	Spear or arrow point	950.52.5	41. 61
13.	Spear or arrow point	950.52.6	41, 61
14.	Lance blade	950.52.10	42, 59
15.	Lance head	950.52.34	41, 59
16.	Knife	950.52.9	43, 61
17.	Salmon harpoon head	950.52.27	42, 61
18.	Fish hook	950.52.31	42, 61
19.	Harpoon head	950.52.15	40, 60
20.	Harpoon head	950.52.17	40, 59
21.	Toy knife	950.52.56	43
22.	Leister prong	950.52.25	42, 60
23.	Fish spear centre prong	950.52.23	42, 59
24.	Sinew twister	950.52.14	41, 59
25.	Model kayak	950.52.2	41, 60

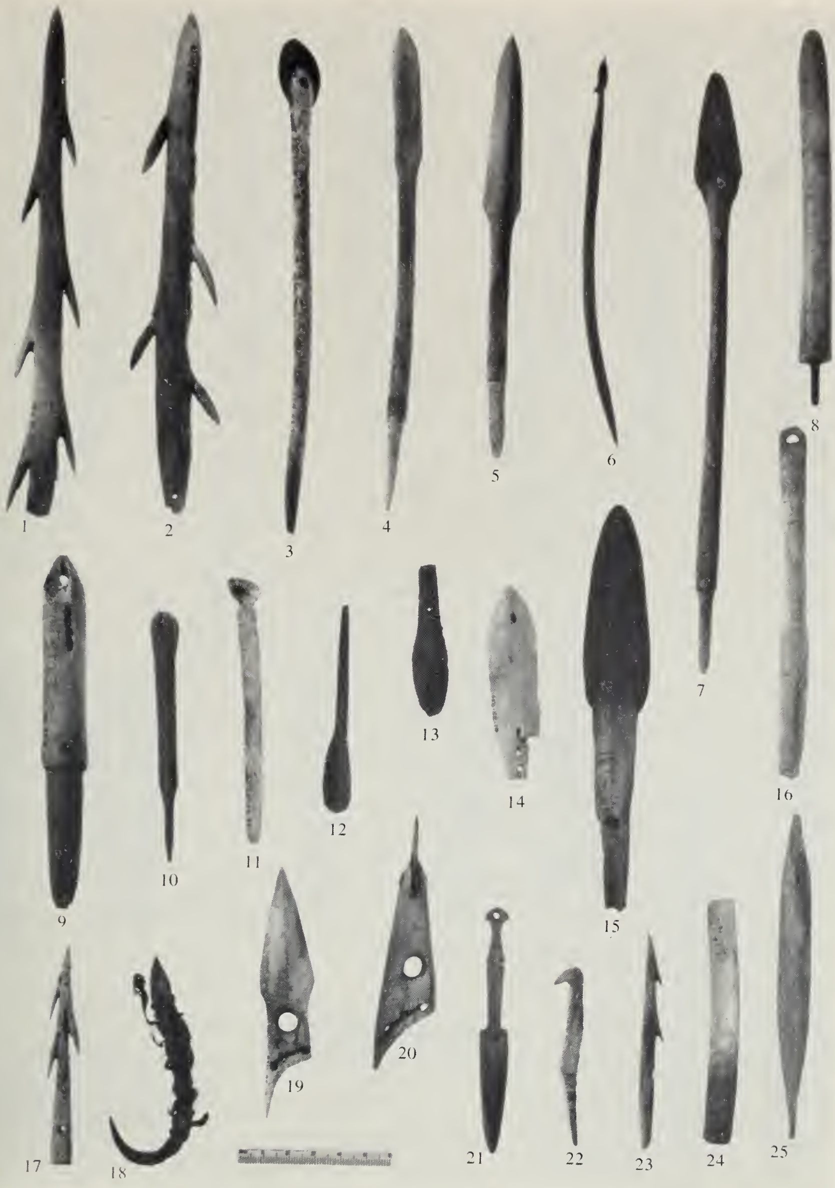


PLATE VIII *Thom Bay grave.*

PLATE IX *The Spence Bay Site*

	Description	*Acc. No.*	*Ref. Page*
1.	Arrow shaft straightener	951.119.66	47, 61
2.	Snow knife blade	951.119.86	50
3.	Lance head	951.119.83	47, 61
4.	Side prong for fish spear	951.119.3	48, 60
5.	Side prong for fish spear	951.119.10	48, 60
6.	Side prong for fish spear	951.119.12	48, 60
7.	Harpoon socket piece	951.119.58	47
8.	Boat model	951.119.111	51, 60
9.	Snow knife handle	951.119.82	49, 60
10.	Dart head	951.119.49	47, 61
11.	Scraper blade	951.119.79	50, 60
12.	Drag line handle	951.119.91	50, 59
13.	Boat model	951.119.110	51, 60
14.	Drill shank	951.119.133	50, 60
15.	Dart head	951.119.48	47, 61

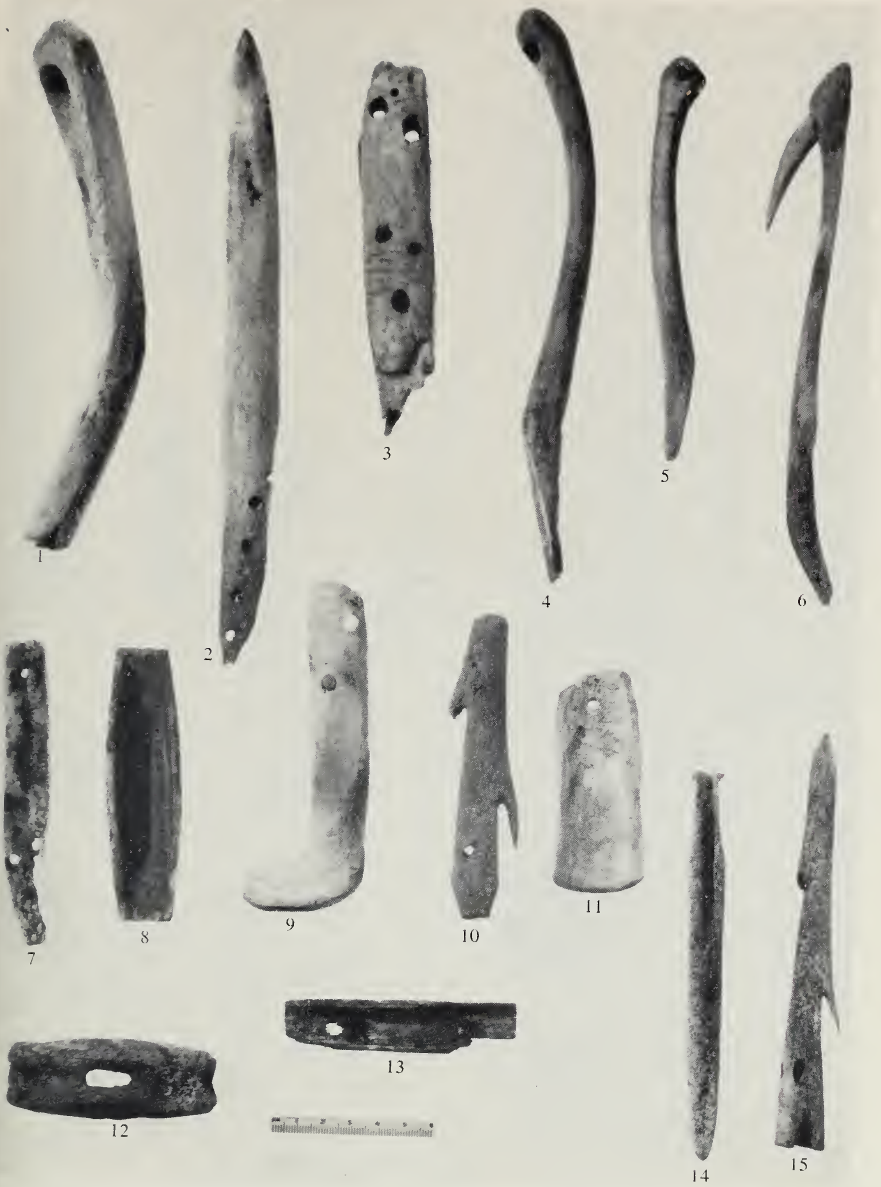


PLATE IX *The Spence Bay Site.*

PLATE X *The Spence Bay Site*

	Description	*Acc. No.*	*Ref. Page*
1.	Harpoon head	951.119.37	46, 59
2.	Harpoon head	951.119.34	46, 59
3.	Harpoon head	951.119.42	46
4.	Harpoon head	951.119.44	46
5.	Harpoon head	951.119.41	46, 59
6.	Harpoon head	951.119.29	46, 59
7.	Harpoon head	951.119.32	46, 59
8.	Harpoon blade	951.119.45	47, 59
9.	Harpoon head	951.119.28	46
10.	Harpoon head	951.114.30	46, 61
11.	Harpoon head	951.119.43	46
12.	Leister prong	951.119.17	49
13.	Marrow extractor (?)	951.119.68	49,. 60
14.	Knife	951.119.57	50, 60
15.	Harpoon socket piece	951.119.59	47, 59
16.	Arrowhead (?)	951.119.60	48, 61
17.	Toy drag line handle (?)	951.119.92	51
18.	Toy soapstone lamp	951.119.65	51, 60
19.	Toy soapstone lamp	951.119.64	51, 60
20.	Drill shank	951.119.135	50, 60
21.	Wound plug	951.119.74	47, 59
22.	Leister prong	951.119.16	48
23.	Barb for fish spear	951.119.23	48, 60
24.	Fish needle	951.119.72	49, 60
25.	Snow probe handle	951.119.78	50, 60
26.	Fish hook	951.119.71	49, 60
27.	Pendant	951.119.75	51, 60
28.	Fish lure or weight	951.119.95	49, 60
29.	Arrowhead	951.119.53	48
30.	Comb	951.119.73	51, 60
31.	Drag line handle	951.119.93	50, 59
32.	Drag line handle	951.119.22	50, 59
33.	Snow goggles	951.119.80	47, 59

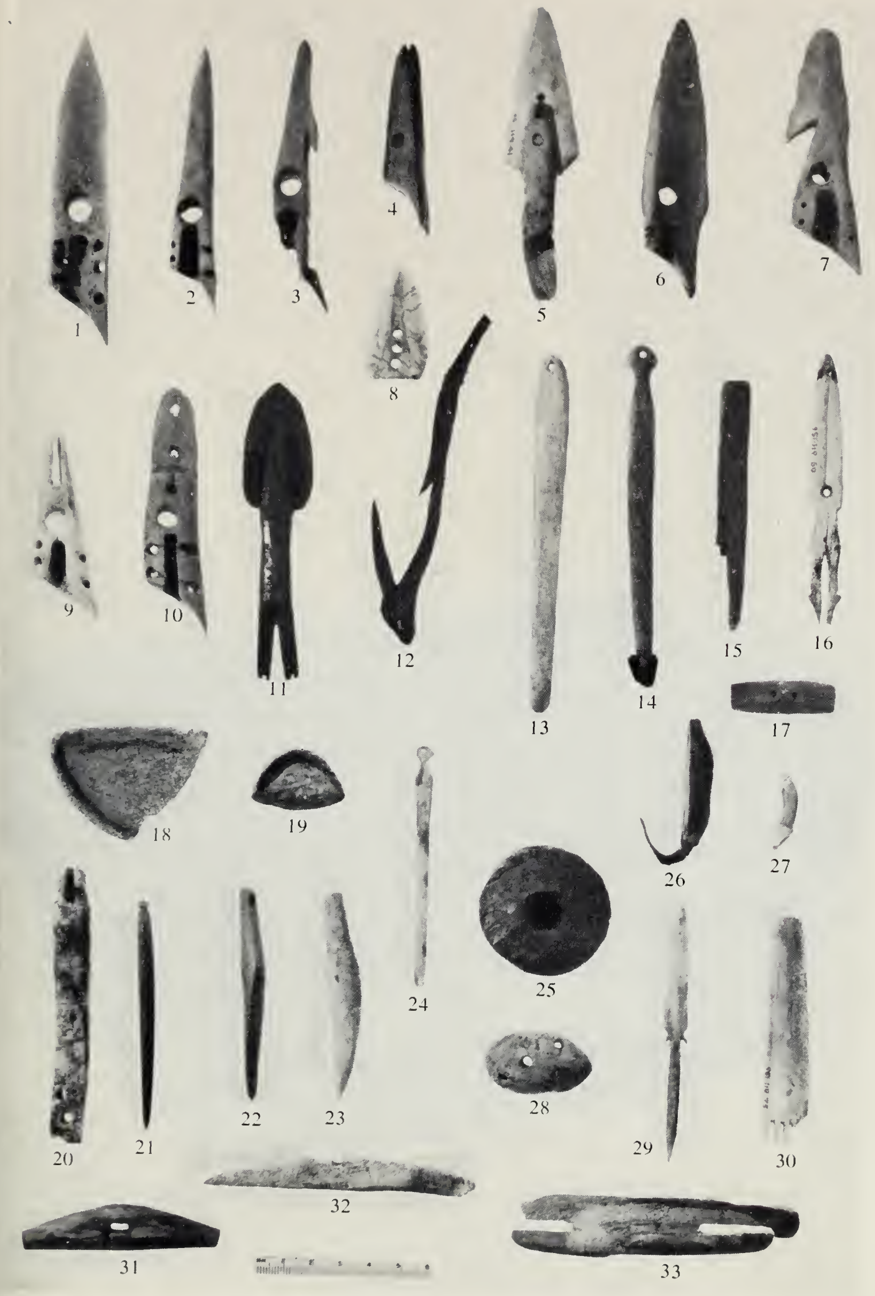


PLATE X *The Spence Bay Site.*

PLATE XI *The Spence Bay Site*

	Description	*Acc. No.*	*Ref. Pag*
1.	Soapstone Cooking Pot	951.119.63	50, 51

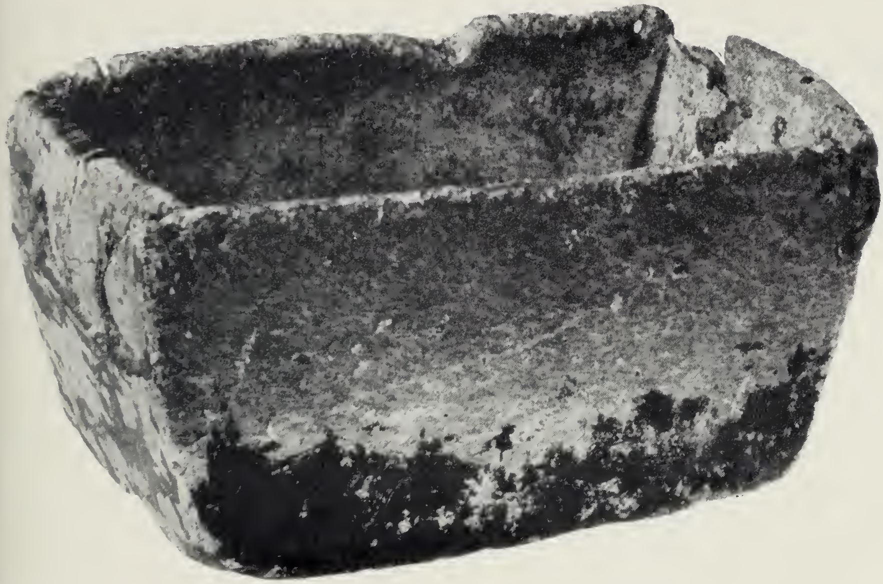


PLATE XI *The Spence Bay Site.*

J. E. ANDERSON and
C. F. MERBS

A Contribution to the Human Osteology of the Canadian Arctic

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Introduction

This is a report on the Eskimo skeletons of the Learmonth collection in the Royal Ontario Museum, Toronto. Comparative data are presented from a survey of all published material from the Canadian Arctic region.

The authors wish to thank Dr. E. S. Rogers for facilities so freely given, Dr. W. S. Laughlin and Dr. Lawrence Oschinski whose knowledge of Arctic osteology has stimulated our interest in this field, and Mr. Lee Warren who photographed the specimens.

The Learmonth Collection

The Learmonth collection of material from the central Canadian Arctic includes thirteen burials from six sites. Burials 1 and 2 are the skulls and parts of the infracranial skeletons of a male and a female from Levesque Harbour, Northeast Boothia, associated with a Thule culture. Burials 3 and 4 are female skulls from a Thule site at Creswell Bay. Two burials were recovered from Possession Point, Batty Bay, on Somerset Island, another Thule site: burial 5 is the skull of a female, and Burial 6 the skull and fragmentary infracranial skeleton of a male. Burials 7, 8, and 9, the skulls of two males and a female, are from recent Netsilik graves near the Netsilik River on the west side of the Boothia Isthmus. The cultural affinities of the remaining four skulls are unknown. Burials 10, 11 and 12, a male and two females, were found on an island north of Douglas Bay on King William Island. Burial 13, a male skull, is from King William Island near the narrows of Simpson Straits.

This material is summarized in Table 1. Six individuals, two males and four females, are related to Thule culture. Three burials, two males and a female, are recent Netsilik. Two males and two females are from sites whose cultural relationship is unknown. Burial 12 is not described as it is represented only by the facial region of an adolescent.

The skeletal material is in good condition, showing varying degrees of weathering and with some growth of lichens on the surface.

BURIAL NUMBER	CATALOGUE	MATERIAL	SEX	SITE	TYPE
1	949.108 1–37	Skull and Infracranial	Female	Levesque Harbour	Thule
2	949.109 1–38	Skull and Infracranial	Male	Levesque Harbour	Thule
3	949.199.9	Skull	Female	Creswell Bay	Thule
4	949.199.8	Skull	Female	Creswell Bay	Thule
5	940.101.37	Skull	Female	Somerset Island	Thule
6	940.101.39–95	Skull and Infracranial	Male	Somerset Island	Thule
7	950.171.1	Skull	Male	West Boothia	Recent Netsilik
8	950.171.2	Skull	Female	West Boothia	Recent Netsilik
9	950.171.3	Skull	Male	West Boothia	Recent Netsilik
10	953.129.2	Skull	Male	King William Islands	Eskimo
11	953.129.3	Skull	Female	King William Islands	Eskimo
12	953.129.4	Skull	Female ?	King William Islands	Eskimo
13	936.35.2	Skull	Male	Simpson Straits	Eskimo

Table 1.—SUMMARY OF THE LEARMONTH COLLECTION

The Osteology of the Canadian Arctic

A survey of the literature was made to secure comparative data. Osteological reports on fifteen groups of skeletons from the Canadian Arctic were found. These, together with the Learmonth Collection sites, are summarized in Table 2. Geographically, they range from the MacKenzie Delta on the west to Ungava Bay on the east. The material was collected by various individuals from 1903 to the present. In all, reports cover 145 skulls of which 77 are male and 68 female. A much smaller sample of the infracranial skeleton has been studied.

The map (Fig. 1) shows the location of the sites surveyed in this report. Legend letters on the map are the same as the code letters found in Table 2. Sites D to I are those of the Learmonth collection. It may be seen that they cluster in the central area of the map in the region of the Boothia Peninsula.

Samples are reported from the main groups of Eskimo in Canada: MacKenzie, Copper, Netsilik, Iglulik, Labrador, and Baffin Island. In age they range from Dorset to very recent and include Thule and Sadlermiut.

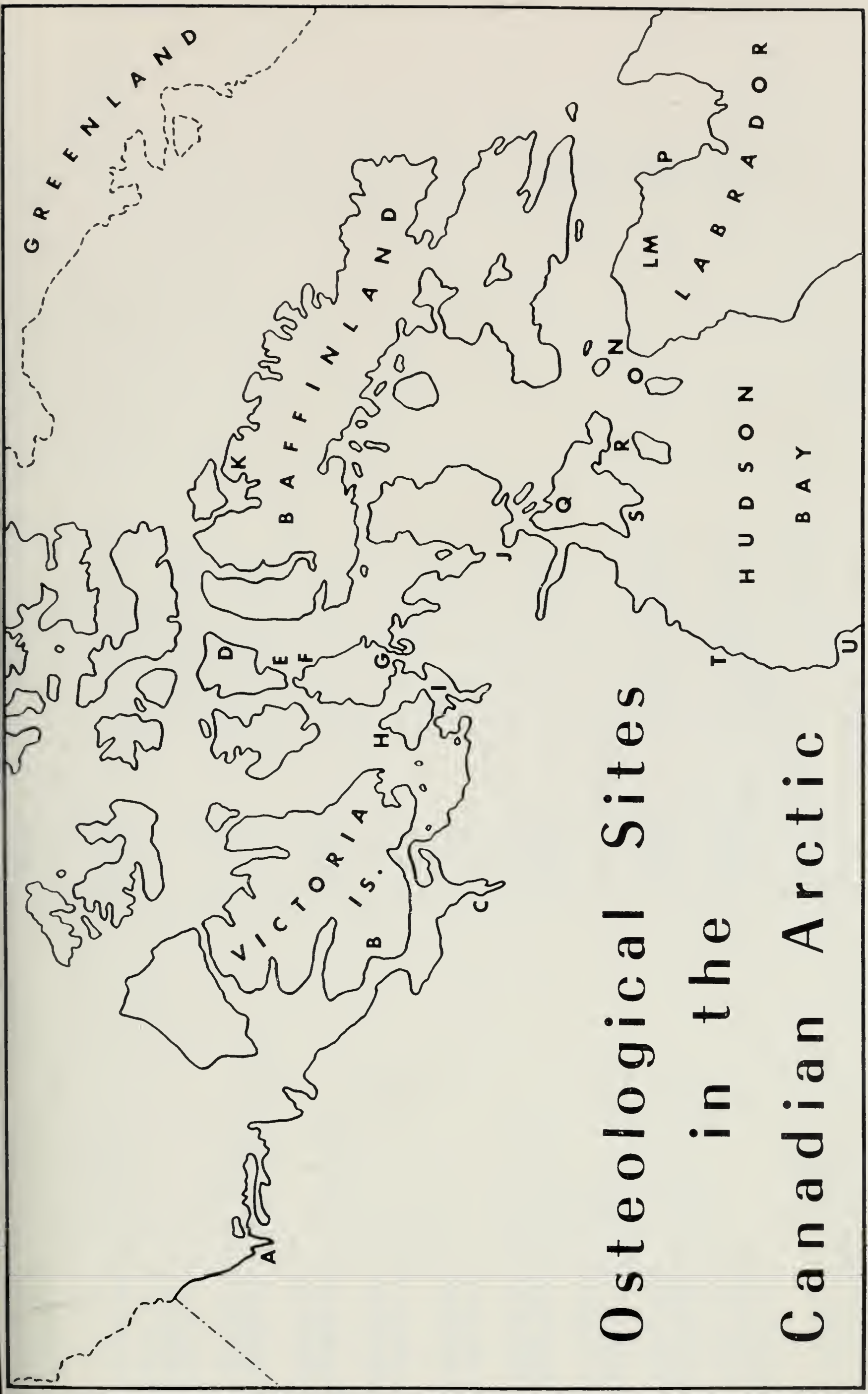


FIGURE 1 MAP OF THE CANADIAN ARCTIC SHOWING OSTEOLOGICAL SITES

CODE	SITE	CULTURE	COLLECTOR	CRANIA		TOTAL	REPORTED BY
				M	F		
A	MacKenzie Delta Baillie Island	MacKenzie Eskimo	V. Stephansson, 1906 F. Johansen, 1916	 1	1 2	1 3	Cameron, 1923
B	Cape Williams, Victoria Island, Young Point	Copper Eskimo	G. H. Wilkins, 1916 D. Jenness, 1916	2 1	1	3 1	Cameron, 1923
C	Bathurst Inlet, Coronation Gulf, in Coppermine Area	Very Recent	Fr. Raymond	1		1	Kidd, 1946
D	Batty Bay, Somerset Island (Burials 5 and 6)	Thule	Learmonth, 1949	1	1	2	
E	Creswell Bay (Burials 3 and 4)	Thule	Learmonth, 1949		2	2	
F	Levesque Harbour (Burials 1 and 2)	Thule	Learmonth, 1949	1	1	2	
G	Netsilik River, West Boothia (Burials 7, 8 and 9)	Recent Netsilik	Learmonth, 1950	2	1	3	
H	Douglas Bay, King William Island (Burials 10, 11, and 12)	?	Learmonth, 1953	1	2	3	
I	Simpson Straits (Burial 13)	?	Learmonth, 1949	1		1	
J	Naujan Site, Repulse Bay	Early Thule	T. Mathiassen, 1922	13	6	19	Fischer-Møller, 1937
K	Qilalukan and Mitimatalik Sites, Baffin Island	Thule and Recent	T. Mathiassen, 1923	5	5	10	Fischer-Møller, 1937

Table 2. SUMMARY OF OSTEOLOGICAL REPORTS OF ESKIMO SITES

CODE	SITE	CULTURE	COLLECTOR	CRANIA		TOTAL	REPORTED BY
				M	F		
L	Old Stone Graves, Labrador	?	W. D. Strong, 1927–1928	21	30	51	Stewart, 1939
M	Mid 19th Century Graves, Labrador	Recent Ungava	W. D. Strong, 1927–1928	12	8	20	Stewart, 1939
N	Sculpin Island, Labrador	?	D. A. Cadzow, 1927	1		1	Oetteking, 1931
O	Mansel Island and Sugluk Island, Ungava	Dorset	W. E. Taylor, 1958	1 Mandibles	1	2	Oschinsky, 1960
P	Imaha Site, Payne Bay, Ungava	Dorset	W. E. Taylor, 1958	1		1	Laughlin, 1960
Q	Kuk, Duke of York Bay, Southampton Island	Sadlermiut-Thule	T. Mathiassen, 1922		1	1	Fischer-Møller, 1937
R	Native Point, Southampton Island	Sadlermiut	W. D. Bell, 1950	1	1	2	Popham and Bell, 1951
S	Manico Point and Point Harding, Southampton Island	Sadlermiut	G. Comer, 1903–09	9	5	14	Hrdlicka, 1910
T	Eskimo Point, Hudson Bay	Very Recent	K. Birket-Smith, 1923	1		1	Fischer-Møller, 1937
U	Churchill River near Fort Prince of Wales, Hudson Bay	Recent	J. C. B. Grant, 1920	1		1	Grant, 1922

Craniology

CRANIOMETRY OF THE LEARMONTH COLLECTION:

Table 3 lists the standard measurements and indices of the 12 measurable skulls from the Learmonth collection, grouped according to sex. The sample size for each cultural group is too small for statistical treatment, therefore each skull is dealt with individually. The analysis used data processing cards (KEYSORT), in an effort to find any correlations between characteristics which might serve to differentiate morphologically between Thule, recent Netsilik, and the four skulls of unknown cultural affinity, but no such differentiation was found. All 12 skulls resemble each other greatly, and the only groupings found were those that reflect sex differences.

Because of their high degree of homogeneity, skulls from all sites have been grouped together. The range and mean of each measurement are reported for the male and for the female skulls. In this series, cranial size is large as shown by vault measurements. The cranial module ranges from 180 to 184 mm. in the females and from 184 to 198 mm. in the males.

The *cranial index* shows that all skulls, except one male and one female, are long in relation to their breadth, i.e. dolichocranial. The two exceptions fall into the mesocranial range. The *length-height index* is variable; seven of the twelve skulls show an average relationship of the two measurements, four are high in relation to length, and one male is very slightly low in relation to length. The skulls as a group are orthocranic with a tendency to hypsicrany. As shown by the *breadth-height index*, all skulls are high in relation to their breath, i.e. tapeinocranic. The *upper facial index* is extremely variable, ranging from 49 to 63, and shows no sex or cultural grouping. All crania except one exhibit a narrow nasal aperture as shown by a *nasal index* in the leptorrhine range. The high *orbital index* of the skulls denotes narrow orbital margins. Ten of the 12 skulls are hypsiconch. The *alveolar indices* are high, expressing the broad palates of the collection, all but three of which fall into the brachyuranic category.

COMPARATIVE CRANIOMETRY:

Table 4 summarizes the cranial measurements and indices of male Eskimo collections from the Canadian Arctic compared with those of the six males from the Learmonth collection. Cranial modules and indices, when not reported by the original authors, have been calculated from given data. Although the samples representative of each area are small, and their temporal and cultural associations are not well under-

Table 3.—CRANIOMETRIC DATA ON THE LEARMONTH COLLECTION

SEX	MALES								FEMALES							
BURIAL NUMBER	2	6	7	9	10	13	Range	Mean	1	3	4	5	8	11**	Range	Mean
Cranial Length	185	184	193	198	185	196	184–198	190	181	182	182	181	180	184	180–184	182
Cranial Breadth	135	133*	141	143	142	133	133–143	138	128	129	128	135	130	134	128–135	131
Basion-Bregma Ht.	140	139	135	143	134	136	134–143	138	131	133	140	139	133	135	131–140	135
Cranial Module	153	152*	156	161	154	155	152–161	155	147	148	150	152	144	151	144–152	149
Cranial Index	73	72*	73	72	77	68	68–77	72	71	71	70	75	72	73	70–75	72
Mnm. Frontal Breadth	95	98	96	105	96	97	95–105	98	96	94	88	93	97	98	93–98	94
Auricular Height	122	117	117	124	119	114	114–124	119	111	119	115	116	114	118	111–119	116
Length-Height Index	76	76	70	72	72	69	69–76	72	72	73	77	77	74	73	72–77	74
Breadth-Height Index	104	105*	96	100	94	102	94–105	100	102	103	109	103	102	101	101–109	103
Bizygomatic Diameter	146	142	141	143	145*	137	137–146	142	135	127	143	133	132*	139	127–143	135
Upper Facial Height	72	70	77	90	71	82	70–90	77	75	66	72	72	65	73	65–75	70
Upper Facial Index	49	49	55	63	49*	60	49–63	54	56	52	50	54	49*	53	49–56	52
Nasal Height	54	51	60	58	54	57	51–60	56	52	47	58	53	48	52	47–58	52
Nasal Breadth	22	22	23	26	24	20	20–26	23	22	22	25	23	24	22	22–25	23
Nasal Index	41	43	38	45	44	35	35–45	41	42	47	43	43	50	42	42–50	44
Orbital Height	37	34	37	37	31	39	31–39	36	36	34	35	38	37	38	34–38	36
Orbital Breadth	41	40	44	41	39	45	39–45	42	40	38	40	39	41	41	38–41	40
Orbital Index	90	85	84	90	79	87	79–90	86	90	89	88	97	90	93	88–97	91
Alveolar Breadth	58	59	69	69	65	64	58–69	64	56	64	67	59	62	63	56–67	62
Alveolar Length	51	56	58	57	55	57	51–58	56	48	49	55	50	48	53	48–55	50
Alveolar Index	114	105	119	121	118	112	105–121	115	117	131	122	118	129	119	117–129	123
CULTURE	Thule		Netsilik		?				Thule				Netsilik	?		

* *Estimated* ** *Deformation*

Table 4.—COMPARATIVE CRANIOMETRY: MALES FROM VARIOUS SITES

SITE	Site A XIV-D-3	Site B XIV-H-4	Site C 1 Male	Lear-month 6 Males Mean	Site J 13 Males Mean	Site K 5 Males Mean	Site L 21 Males Mean	Site M 12 Males Mean	Site N Burial 897	Site P 1 Male	Site R 1 Male	Site S 9 Males Mean	Site T Ms 23
Cranial Length	182	196	175	190	190	188	188	186	189	185	183	189	189
Cranial Breadth	128	143	134	138	137	135	135	134	125	130	141	140	136
Basion-bregma Ht.	140	140	133	138	139	136	135	134	133	140	142	140	136
Cranial Module	150	160	147	155	153	153	153	151	146	152	155	156	151
Cranial Index	70	73	76	72	72	72	72	73	69	70	77	74	75
Mnm. Frontal Breadth	94	104	95?	98	97	96	94	92	91	98	97	96	98*
Auricular Height	—	—	—	119	117	115	—	—	110	—	—	—	110
Length-height Index	77	71	76	72	73	73	72	73	74	76	78	74	75
Breadth-height Index	109	98	99	100	101	100	100	100	106	108	101	100	100
Bizygomatic Diameter	—	148	129	142	141	137	136	133	130*	142	149	145	136
Upper Facial Height	68	90	71	77	76	73	74	77	72	—	72	77	76
Upper Facial Index	—	61	55	54	54	54	55	59	55	—	48	53	57
Nasal Height	57*	64	56	56	56	51	52	51	52	48	58	54	54
Nasal Breadth	26*	23	22	23	23	24	22	22	22	26	26	23	23
Nasal Index	46*	36	39	41	41	46	43	44	42	54	45	42	42
Orbital Height	37	41	37	36	36	35	36	36	34	34	38	37	37
Orbital Breadth	41	46	37	42	41	40	40	39	43	41	42	41	38
Orbital Index	90	89	100	86	88	88	90	92	79	83	90	90	97
Alveolar Breadth	—	67	?	64	65	64	63	63	64	67	—	—	62
Alveolar Length	—	56	?	56	53	53	54	55	54	54	—	—	54
Alveolar Index	—	120	?	115	121	120	117	115	118	124	—	—	115

* *Estimated*

stood, all material from Arctic Canada summarized here appears to be remarkably homogeneous in regard to craniometric features. The description given above of the Learmonth skulls also applies in general terms to other collections of crania from the Canadian Arctic.

NON-METRICAL STUDY OF THE SKULL:

The skulls of the Learmonth collection are long and rugged with strong muscle markings. The shape of the vault as seen from above is oval in ten of the skulls and rhomboid in the other two. A *sagittal keel* is absent in 5, of which 4 are females. There is a moderate keel in 4, while in 3 it is very marked. The occipital pole of the skull is represented by a ridge in 8 skulls, and by a mound in the other four.

Wormian bones occur in the lambdoid suture in 7 of the 12 crania. Parietal notch bones are present bilaterally in Burials 2 and 10, and unilaterally in Burials 4 and 13. None of the skulls has a metopic suture. The "H" form of *pterion* is present bilaterally in all of the series. Stewart (1939) states that in the Labrador collection of crania the pterion is "H" form in all cases but one, which is "X".

The *facial region* is large, rugged, and flat. The zygomatic bones are large, and project both anteriorly and laterally. A small malar tuberosity is present, as well as a flared tubercle at the zygomaxillary suture inferiorly. The canine fossae are deep. Prognathism is absent or only slight in the skulls of this collection.

The orbital margins are rather square, with rounded inferolateral angles and little or no inclination from the horizontal plane. The *supraorbital ridges* are prominent and of the continuous type. In seven skulls they are V-shaped; five of these are females. The supraorbital vessels and nerve enter the face through a foramen on both sides in only two of the skulls and through bilateral notches in five. In the other five skulls there is a notch on one side and a foramen on the other. The skull of Burial 13 has an accessory left infraorbital foramen. Laughlin (1960) reports this variation as being bilateral in the Dorset skull and states that it occurs in a high frequency in Greenland crania.

The *anterior nasal aperture* is long and narrow. Its inferior margin is sharp in only two of the skulls; in others it is blurred. Two of the latter have a prenasal sulcus. The *nasal bones* are narrow and tapered. Their sharp angulation to each other and their hour-glass form as seen from in front give the nasal region a pinched appearance. In most cases the nasal bones are not of equal size superiorly, the left being smaller, and the upper third of the internasal suture is tortuous. The *nasal profile* is concave.

Oetteking (1931), in describing the nasal region of the Sculpin Island Skull (Site N) states that the nasal bones taper at their upper ends and do not reach the nasofrontal suture.

Contrary to most reports of Eskimo crania, the *mandibular (glenoid) fossae* are quite deep. The postglenoid tubercle is relatively small. In the skulls of Burials 6 and 7 there is bilateral arthritic change in the surface of the articular eminence.

As expected, the *mastoid processes* show a sex difference in size. In the skull of Burial 6 the left mastoid process is destroyed laterally as a sequela of mastoiditis.

The *tympanic plate* in the Learmonth skulls is thickened laterally. Seven of the 12 skulls have a defect or dehiscence in the central portion of the plate. In two skulls it occurs bilaterally, in two skulls only on the right, and in three skulls only on the left.

Only two authors of osteological reports on material from the Canadian Arctic refer to dehiscences in the tympanic plate. Stewart (1939) records the incidence of this variation in his two series from Labrador (Sites L and M). These data are presented as fractions of the total series examined as follows:

	Old Stone Graves	*Recent Burials*
Males (Right side):	5/21	3/12
Males (Left side):	2/21	4/12
Females (Right side):	9/31	2/6
Females (Left side):	10/31	2/6

Laughlin (1960) reports the presence of bilateral dehiscences in the Dorset skull from Imaha (Site P).

The *hard palate* in the Learmonth crania is large and broad. The palatine suture bulges anteriorly in five cases, is straight in six, and bulges posteriorly in only one (Burial 6). Minimal palatine tori are present on two skulls, Burials 1 and 3. Laughlin's Dorset skull has a slightly developed palatine torus. Stewart reports an incidence of 34.8% in Old Stone Grave crania, and 15.4% in recent burials from Labrador, and states that only one has more than slight development.

A *precondylar tubercle* is present in one skull of the Learmonth collection (Burial 4). There is no evidence of a paramastoid tubercle in any of the eight skulls in which this region is undamaged. A pterygospinous foramen is present in one of eleven skulls with intact lateral pterygoid plates (Burial 7). This variation is illustrated in Plate I.

The general form of the Learmonth crania is illustrated in Plate II, III and IV, which are photographs of the skulls from Burials 2, 9 and 13. The skull of Burial 11 is worthy of special note because of a marked developmental deformation. The right half of the lambdoid suture has fused prematurely with resulting asymmetrical growth of the vault. When the skull is placed in a craniophore with the interauricular plane fixed, the facial skeleton is warped to the right. In this position, the nasion lies 11 mm. to the right of the midsagittal plane. The lower point on the left zygomaxillary suture is 39 mm. to the left of the midsagittal plane, 6 mm. higher, and 8 mm. more posterior. As seen from behind while in the craniophore, the left parietal region appears bossed, but the same area on the right is obliquely flattened. The inion remains in the midsagittal plane, but the lambda is 5 mm. to the left of this plane. Plate V illustrates the deformation of this skull.

THE MANDIBLE:

In general description, the mandibles of the Learmonth Collection are robust, with a very broad ramus and a shallow mandibular notch. The bigonial diameters are large due to the overall size of the mandible and to the *gonial eversion* which is present in three of the four males and in both of the female specimens. In Burials 1 and 10, eversion is distinctly greater on the right side of the mandible. Plate VI is a photograph of the mandible of Burial 13, showing features typical of the Eskimo.

Table 5 contains the measurements and observations of the male mandibles from sites in the Canadian Arctic. Metrically, mandibles from the various localities resemble each other rather closely. Descriptive accounts of the mandible are conspicuously lacking in most reports as evidenced by the numerous question marks in Table 5.

One of the six Learmonth mandibles, Burial 13, has a slight torus. The presence of a *mandibular torus* is mentioned in many of the reports, but its actual incidence is not given. In his study of Greenland Eskimo crania, Laughlin (1956) shows that the occurrence of a mandibular torus ranges from 44.4 to 89.5 percent.

The mandible of Burial 2, a male from the Thule site at Levesque Harbour, has an *accessory mandibular foramen* on the right side 8 mm. above the normal location. One mandible (D-5) from Site B shows the same anomaly. Plate VII is a photograph of the inner surface of the ramus of the mandible from Burial 2 showing the two mandibular foramina.

DENTAL CONDITIONS:

In all the skulls of the Learmonth Collection there is evidence of both premortem and postmortem loss of teeth. The alveolar processes are porous and receding due to periodontal disease particularly distal to the canine teeth. Four jaws show signs of alveolar abscesses. Marked attrition of the remaining teeth is universal. Two examples of the congenital absence of the upper third molar are present, on the right side in burial 3, and on the left side in burial 11. There are no signs of caries.

In the reports from other sites in the Canadian Arctic, somewhat similar conditions are described. Premortem tooth loss and periodontal disease are universal. No case of caries is reported. Except for the skull from Site C (Kidd, 1946), the authors describe marked attrition of

SITE	LEARMONTH COLLECTION				Site A XIV-D-5	Site B XIV-H-8	Site J Mean of 13 Males	Site K Mean of 5 Males	Site N 1 Male	Site O Mansel Island	Site P 1 Male	Site R 1 Male	Site S Mean of 9 Males	Site T 1 Male
	Site D #6	Site F #2	Site H #10	Site I #13										
Breadth of Ramus	42	41	36	47	42(L)	40	40	37	42	41	40	45	41	42
Height of Ramus	52	61	61	69	—	—	65	54	61	?	?	?	?	64
Symphysis Height	32	36	32	37	42	42	36	35	37	?	?	35	37	39
Bigonial Breadth	116	118	110	102	115	123	113	108	?	?	121	123	115	115
Chin Form	Medio-Bilateral	Medio-Bilateral	Bilateral	Medio-Bilateral	?	Medio-Bilateral?	?	?	?	Bilateral?	Bilateral	?	One is Bilateral	?
Gonial Eversion	+	+	+	0	?	Marked	?	?	?	?	Marked	?	One is Marked	?
Mandibular Torus	0	0	0	+	?	Present	"Present in Several"	?	Present	Present	Medium Nodular	?	"Common"	?
Abnormalities	—	Double R Mandibular Foramen	—	—	Double R Mandibular Foramen	—	—	—	—	—	—	—	—	—

Table 5.—DATA ON MALE MANDIBLES FROM VARIOUS SITES

remaining teeth. Cameron (1923) reports the measurements of tooth dimensions done by Dr. S. G. Ritchie who states: "the average measurements of the Eskimo teeth tend to be greater than those of the more civilized races".

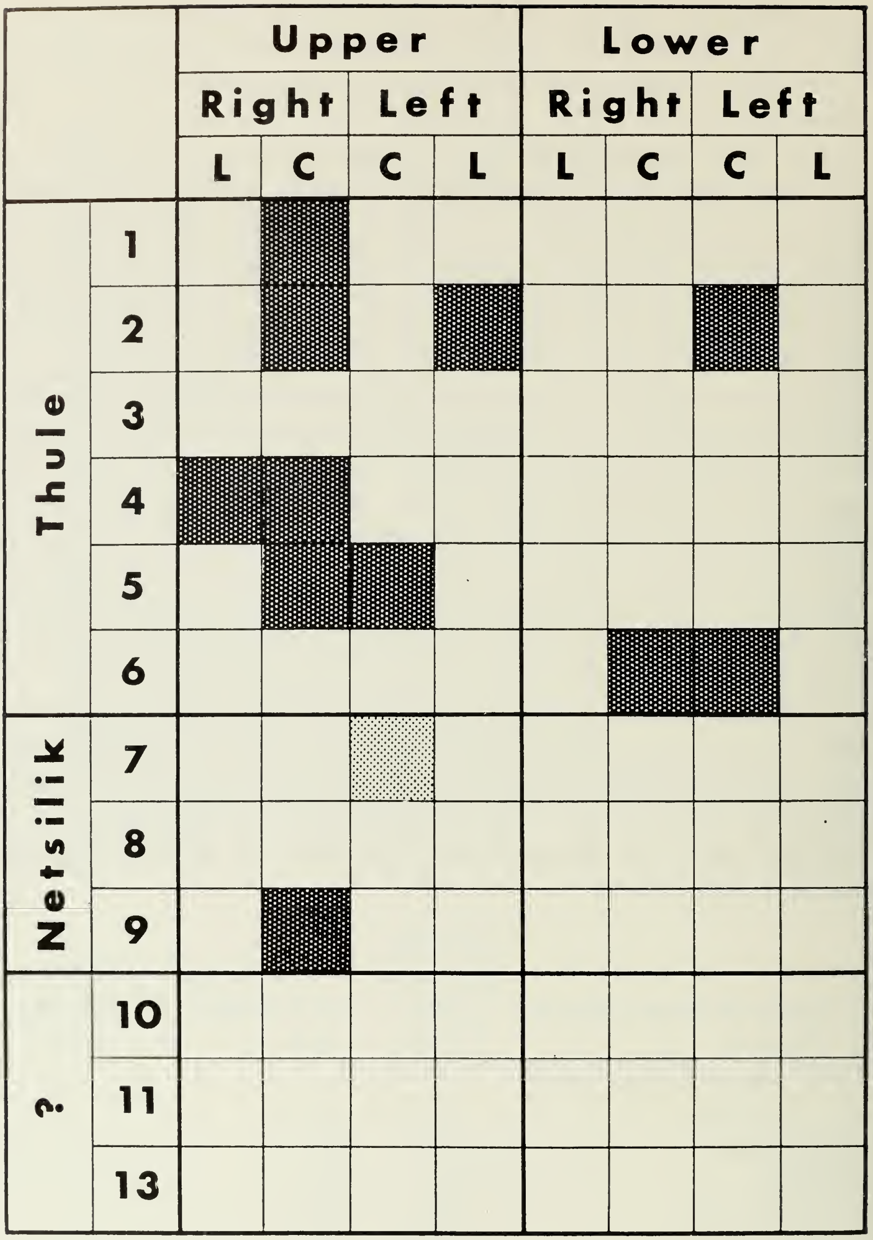
In the Learmonth Collection the premortem loss of isolated incisor teeth in certain skulls is quite striking. In these cases, there is resorption of alveolar bone suggesting long-standing tooth loss, and the adjacent teeth or their sockets appear healthy. In three cases there are signs of traumatic removal of the tooth with fracture of the labial plate of the alveolar process. Photographs of six specimens are shown in Plate VIII. When the occurrence of this premortem incisor loss is tabulated, an interesting correlation is found. Figure 2 illustrates graphically the sites of premortem incisor loss in the jaws of the Learmonth collection. It can be seen that this condition is present in five of the six Thule skulls, in one of the three Netsilik skulls, and in none of the three whose cultural affinity is unknown. In the skull of Burial 4, all right anterior teeth have been lost through a fracture of the alveolar process of the maxilla. The upper left central incisor of Burial 7 is marked in Figure 2 because it has been fractured some time before death. Its sharp incisive surface projects slightly from the alveolus and shows signs of wear.

Hrdlicka (1940) studied collections of crania from Siberia and the New World for ritual ablation of teeth. He noted loss of isolated incisor teeth occurring with varying incidence in different populations and states that ritual ablation of incisors has been a widespread practice from the neolithic to present times. The incidence in some of the series that he studied follows:

	Crania examined	*Percentage of ablation*
Little Ob River (Siberia)	206	16.3 (male) 13.9 (female)
Chukchi	116	6.9
Eskimos (St. Lawrence Island)	443	6.6
Prealeuts	93	52.7
Aleuts	281	18.2
Prekoniags	200	11.0
Koniags	83	2.4

He notes that the teeth were extracted perhaps by use of a sinew, that they were levered from the jaw sometimes fracturing the labial plate of the alveolar process, that they were removed during adolescence, that both sexes were affected but usually males predominated, and that the practice was a ritual observance.

It is suggested here that the findings in the skulls of the Learmonth Collection are similar to those described by Hrdlicka.



		Upper				Lower			
		Right		Left		Right		Left	
		L	C	C	L	L	C	C	L
Thule	1		▨						
	2		▨		▨			▨	
	3								
	4	▨	▨						
	5		▨	▨					
	6						▨	▨	
Netsilik	7			░					
	8								
	9		▨						
?	10								
	11								
	13								

FIGURE 2

GRAPH SHOWING PREMORTEM LOSS OF INCISORS: THE LEARMONTH COLLECTION

The Infracranial Skeleton

THE LEARMONTH COLLECTIONS

Learmonth Burials 1, 2 and 6 include parts of the infracranial skeleton.

Burial 2 includes the almost complete skeleton of a Thule male. The appearance of the symphysis pubis suggests an age of over 50 years. Muscle markings are strong throughout. Both *scapulae* are present. The superior border is of the low triangular form and the vertebral border is strikingly convex. Cristae on the costal surface of the scapula are fairly prominent and the Teres major impression is large. There is a suprascapular notch bilaterally, but on the right side there is partial ossification of the suprascapular ligament. The *humeri* do not have septal apertures. The *femora* show only slight bowing and torsion. The fovea for the ligament of the head is round. There is no Fossa of Allen or third trochanter. Bicondylar length is 43.1 cm. (left) and 42.8 cm. (right). The diameter of the head is 52 mm. The Platymeric Index is 88 (eurymeric). The *tibiae* have lengths of 35.9 cm. (left) and 36.1 cm. (right). The Platycnemic Index is 66 (mesocnemic). There are no squatting facets on the *talus*. Stature estimated from the lengths of the femur and fibula using Trotter and Gleser's tables for Mongoloids is 164±3 cm. (66 inches).

There are evidences of osteoarthritis throughout the skeleton. Both medial and lateral ends of the right clavicle are pitted and exhibit marginal lipping. There is minimal distortion of the glenoid fossa of the scapula and its acromial facet. The head of the left femur is pitted centrally. Arthritic changes are present on the superior and inferior articular facets of the four available cervical vertebrae. There is a healed compression fracture of one thoracic vertebral body.

Burial 1 is a fragmentary skeleton of an adult Thule female. The only abnormalities are severe osteophytosis of the fifth and sixth cervical vertebrae, arthritis of the cervical articular facets, and a mild compression fracture of a mid-thoracic vertebra.

Burial 6 includes the partial skeleton of an adult Thule male. There is a partial bridge for the vertebral artery on the posterior arch of the atlas. The second and third cervical vertebrae are fused together as shown in Plate IX. There are marked arthritic changes in the cervical vertebrae and to a lesser extent in the thoracic region. There is extensive arthritic damage to the right elbow joint. The coronoid and olecranon fossae are partially filled with a growth of new bone. The capitulum is severely pitted and there is medial lipping of the trochlea. The proximal end of the ulna is irregularly lipped. The head of the radius is crushed and distorted with an irregular extension on the medial side where it contacts the radial notch of the ulna. There is limitation of extension at the elbow as well as a loss of pronation. The left elbow joint is normal. Plate X is a photograph of the pathological right elbow. It is interesting to note that on two other sites isolated arthritic damage to the elbow joint is described: Site P (Laughlin, 1960) and Site U (Grant, 1922).

COMPARATIVE DATA:

Very little comparative information on the infracranial skeleton from the Canadian Arctic is available. Table 6 summarizes metrical data from five sites as well as the Learmonth Collection. As with the comparative craniometry, metrical comparison of the infracranial skeleton shows a surprising homogeneity between sites. Males stature ranges from 156 to 167 cm. (5′1″ to 5′6″). In contrast with most North American Indian series, there is little or no flattening of the shaft of the tibia or the subtrochanteric region of the femur. Femora are mainly eurymeric and tibiae are mesocnemic. Humeroradial and tibioradial indices demonstrate the relatively short radius which has been noted by other authors. The tibia is short in relation to the femur as in other Mongoloids.

Some comparative information is reported for the occurrence of septal aperture of the humerus and third trochanter of the femur. The skeleton from Site N reported by Oetteking has only one available humerus, the left, which does not have a septal aperture. Three of the 14 Thule humeri studied by Fischer-Møller have septal apertures. The incidence of septal aperture in the Labrador material from Sites L and M is 17.7% in 62 humeri combined sides and sexes (Stewart, 1939). The occurrence of this variation in the collection is given as a fraction of the series studied and is as follows:

	Right	*Left*
Old Stone Grave males:	2/7	2/9
Recent Grave males:	0/12	0/11
Old Stone Grave females:	2/4	3/6
Recent Grave females:	1/6	1/7

In the 23 paired femora from Sites L and M, a third trochanter appears seven times on the right and ten times on the left. There is no third trochanter in the Dorset skeleton from Site P.

Discussion

Discussion may well begin by noting the limitations of the material studied in this paper and reported on in the survey of other series from the Canadian Arctic. It is obvious at the outset that in most cases samples are small, are unequally distributed throughout the area being studied, and in many cases have only a vague archaeological

Table 6.—INFRACRANIAL MEASUREMENTS AND INDICES

SITE	LEARMONTH COLLECTION			J		L	M	N	P
	#1 Female	#2 Male	#6 Male	Male Means	Female Means	Male Means	Male Means	1 Male	1 Male
Clavicle Length	—	143	142	—	—	—	—	138	—
Clavicle Max. Diameter	—	11	10	—	—	—	—	11	—
Humerus Length	—	312	—	311	265	296	301	298	317
Humerus Max. Diameter	—	27	—	26	21	21	24	22	26
Radius Length	—	230	208	225	199	202	214	—	221
Radius Max. Diameter	—	16	15	—	—	—	—	—	—
Femur Length	—	431	—	433	394	420	419	423	426
Femur Subtrochanteric Dia. A/P	27	29	—	28	25	24	25	29	27
Femur Subtrochanteric Dia. Lat.	29	33	—	34	29	32	32	33	31
Platymeric Index	93	88	—	83	86	74	79	88	87
Tibia Length	—	359	—	357	331	341	332	338	360
Tibia A/P Dia. at Foramen	33	38	33	36	33	—	—	33	—
Tibia Lat. Dia. at Foramen	21	25	21	26	23	—	—	21	—
Platycnemic Index	64	66	64	71	70	—	—	64	—
Fibula Length	—	341	—	—	—	—	—	—	—
Stature (centimetres)	—	164	156	161	146	158	158	160	167
Humeroradial Index	—	72.8	—	72.2	75.0	75.6	74.2	—	69.7
Femorotibial Index	—	83.3	—	80.9	82.8	80.8	79.1	79.7	83.9
Humerofemoral Index	—	72.4	—	72.0	67.4	70.7	70.8	70.5	73.9
Tibioradial Index	—	64.0	—	64.2	61.0	59.3	64.5	—	61.4

provenience. There is also a very great lack of infracranial skeletons available for study. Then too, emphasis has been put on metrical data and on the very gross quantitative observations on crania. Little is known of skeletal pathology of the area. In the absence of large series, however, small miscellaneous collections take on an added importance, if only to give a preview of the potentialities of the area, to establish a sense of problem, and to plan the methodology required to solve it.

From the data reported in this paper, a few positive statements may be made, remembering again the limitations of sample size and vague provenance. First of all, the physical similarity of the skeletons of Thule sites and those of the recent Netsilik support the suggestion of the continuity of these cultures made by Dr. VanStone in the first part of this paper. Secondly, there is a striking degree of homogeneity of physical type throughout the entire Canadian Arctic. From the material available it would appear that a physical type has been described which remains fairly constant in time and in space. Thirdly, an incidental finding from the Learmonth collection is the premortem loss of isolated incisor teeth, highly suggestive of ritual ablation, and perhaps forming a link with the same practice in Alaska and in Northeast Asia.

Based on the findings so far, it would appear that for more discriminating assistance in helping to answer some of the questions of the Arctic, very little help may come from measurements, indices, stature determination, and other gross observations of the skeleton. However, an almost untapped area of great potentiality lies in the observation and analysis of skeletal variation: discrete traits or anomalies, whose mode of production is probably genetic in nature, and whose incidence in related populations may give clues to the process of microevolution. A profitable pursuit would be the restudy of skeletal collections with this in mind, and a changed emphasis in dealing with future material.

Physical anthropologists may look forward hopefully to the location and study of larger collections whose cultural affinity is well defined. Studies such as Laughlin's present work on a large Sadlermiut population (Harp, 1960) should be most interesting and helpful on completion. From numerous population studies of this type, the plotting of the incidence of skeletal anomalies as they occur across the extent of the Arctic may do much to assist the archaeologist in the reconstruction of population movements, in the solution of temporal sequence problems, and in working out the relationships of Eskimo populations to their Indian neighbours. Extended further, these series should be compared to similar ones in Greenland, in Alaska, and in Northeast Asia.

Summary

1. An osteological study is reported on the Learmonth Collection from the Canadian Arctic, consisting of 13 skulls and 3 partial infracranial skeletons. These have been compared with 145 skulls from 15 other reported sites in the area, ranging from the MacKenzie Delta to Labrador, and extending in time from Dorset Culture to recent Eskimo.
2. The reported skeletons are of a surprisingly homogeneous physical type, possessing a long rugged skull, high in relation to its breadth, with a flattened facial region, prominent zygomatic arches, continuous form of brow ridge, narrow orbital margins, pinched nasal bones, and a narrow nasal aperture, with blurred inferior margin. Frequently occurring are: a sagittal keel, palatine and mandibular tori, gonial eversion, foramen anomalies, and dehiscences in the tympanic plate. Stature of males ranges from 156–167 cm. There is no appreciable flattening of the shafts of tibia or femur.
3. Interesting examples of arthritis are described. One skull of the Learmonth Collection shows deformation due to premature suture closure. The presence of ritual dental ablation is suggested.

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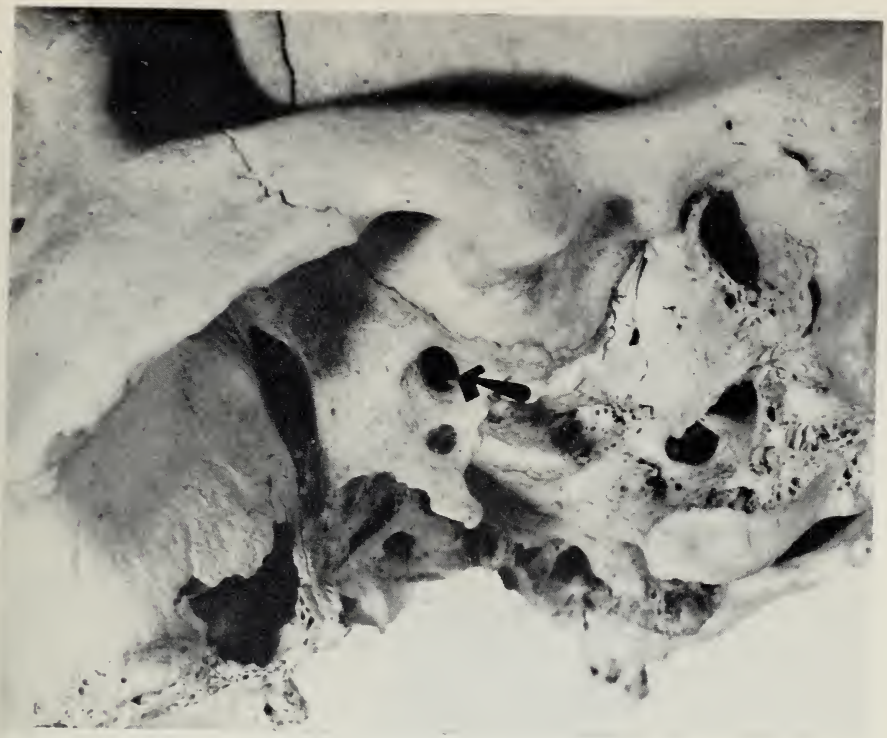


PLATE I *The left infratemporal region of Burial 7, showing a pterygospinous foramen. Acc. No. 950.171.1.*

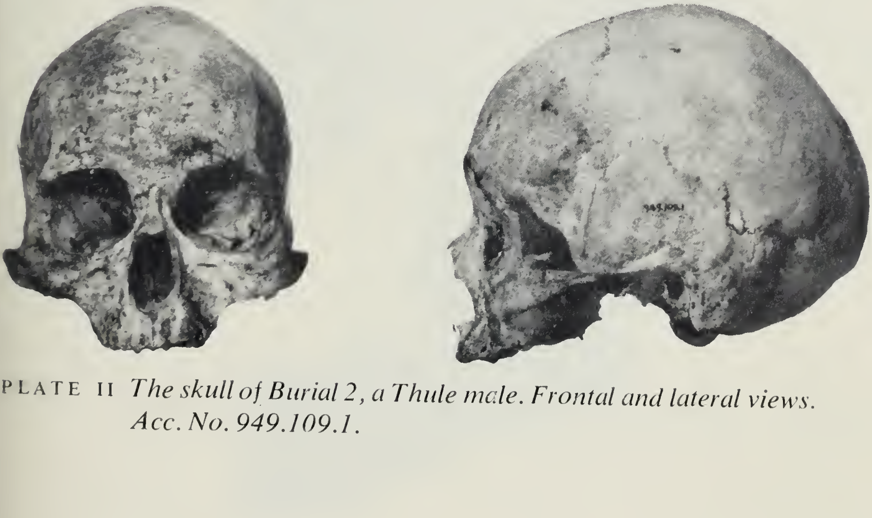


PLATE II *The skull of Burial 2, a Thule male. Frontal and lateral views. Acc. No. 949.109.1.*

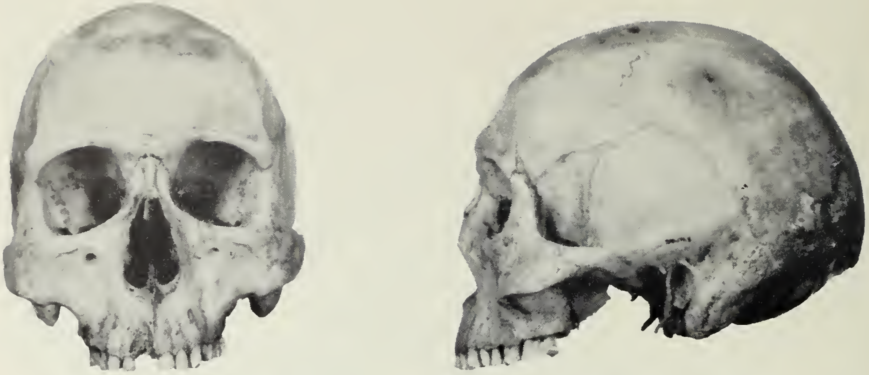


PLATE III *The skull of Burial 9, a Netsilik male. Frontal and lateral views. Acc. No. 950.171.3.*

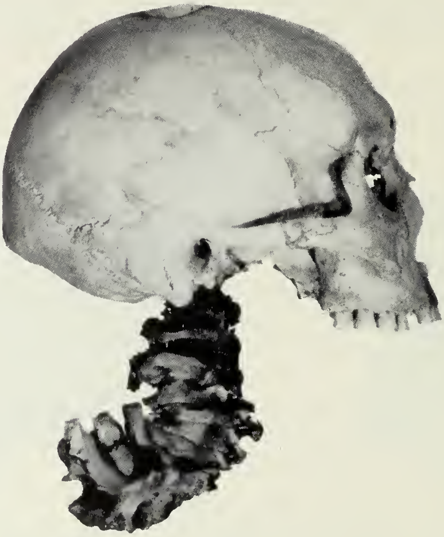


PLATE IV *Lateral view of the skull and cervical region of Burial 13. Acc. No. 936.35.2a.*

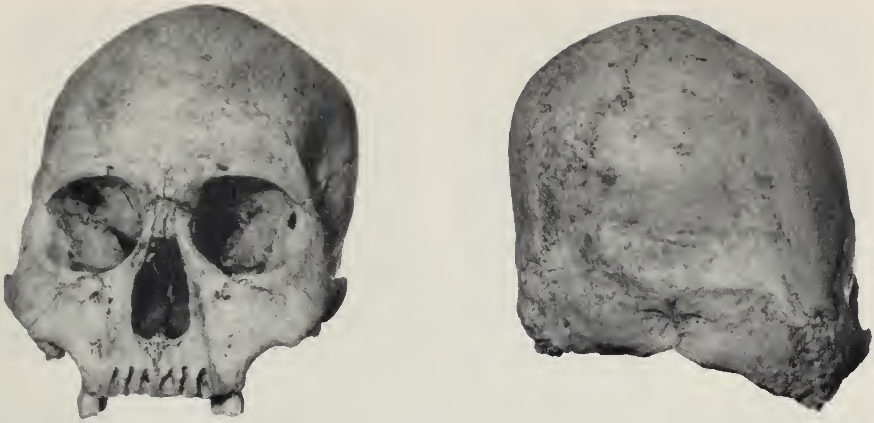


PLATE V *Two views of the skull of Burial 11, showing the marked deformity. Acc. No. 953.129.3.*

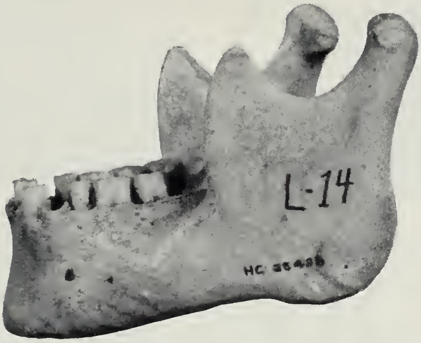


PLATE VI *The mandible of Burial 13. Acc. No. 936.35.2b.*

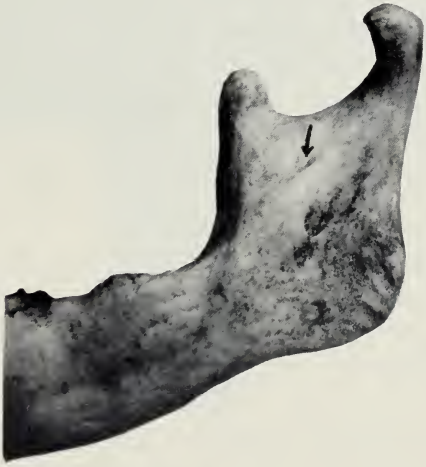
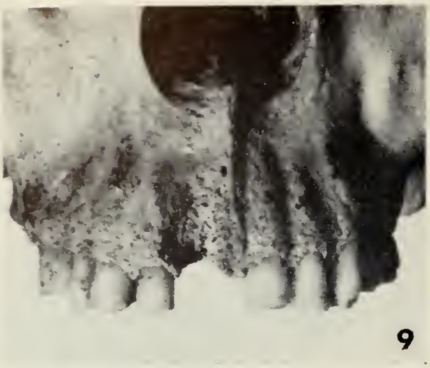


PLATE VII *The inner surface of the mandible of Burial 2, showing an accessory mandibular foramen. Acc. No. 949.109.*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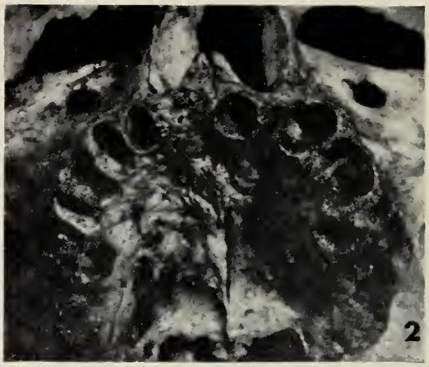
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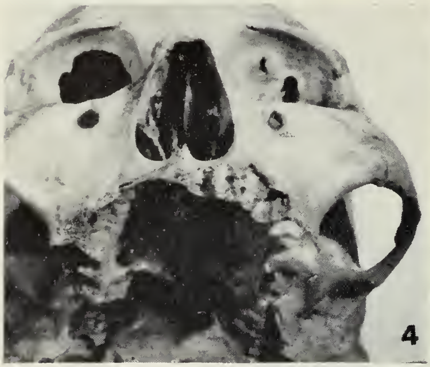
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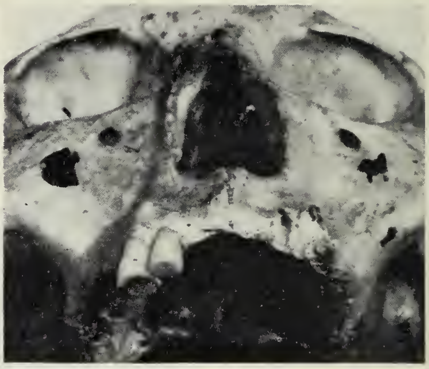

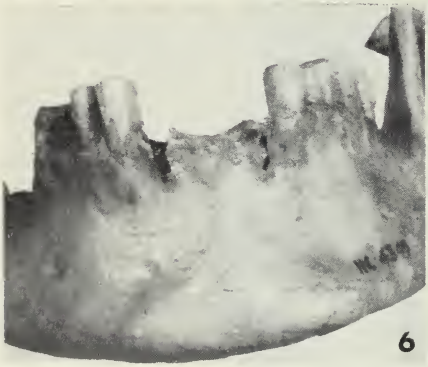
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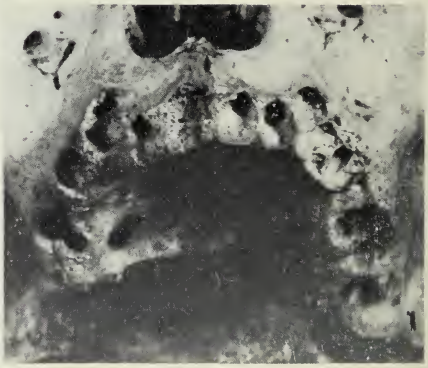
1

PLATE VIII *Photographs showing the premortem loss of incisor teeth.*
Burial 1, Acc. No. 949.108.
Burial 2, Acc. No. 949.109.
Burial 4, Acc. No. 949.199.8.
Burial 5, Acc. No. 940.101.37.
Burial 6, Acc. No. 940.101.39.
Burial 9, Acc. No. 950.171.1.

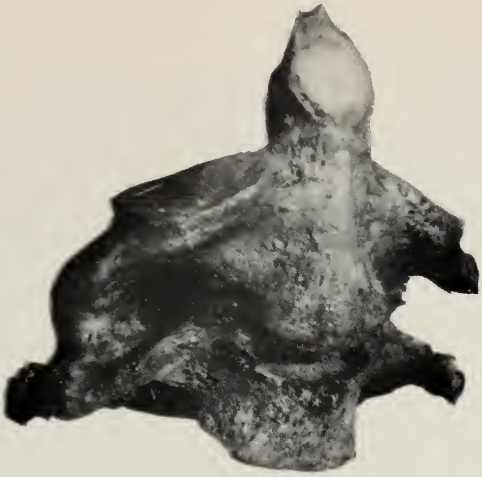

PLATE IX *Fused second and third cervical vertebrae from Burial 6. Acc. No. 940.101.95.*

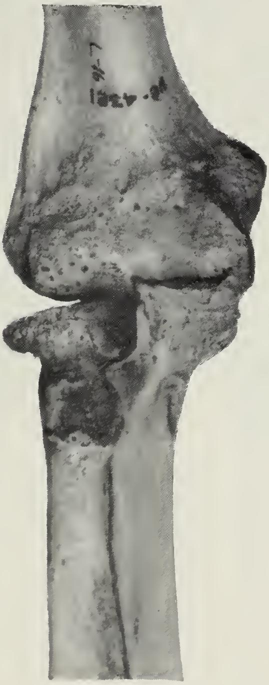

PLATE X *The right elbow region of Burial 6, showing extensive arthritic changes. Acc. No. 953.129.2.*

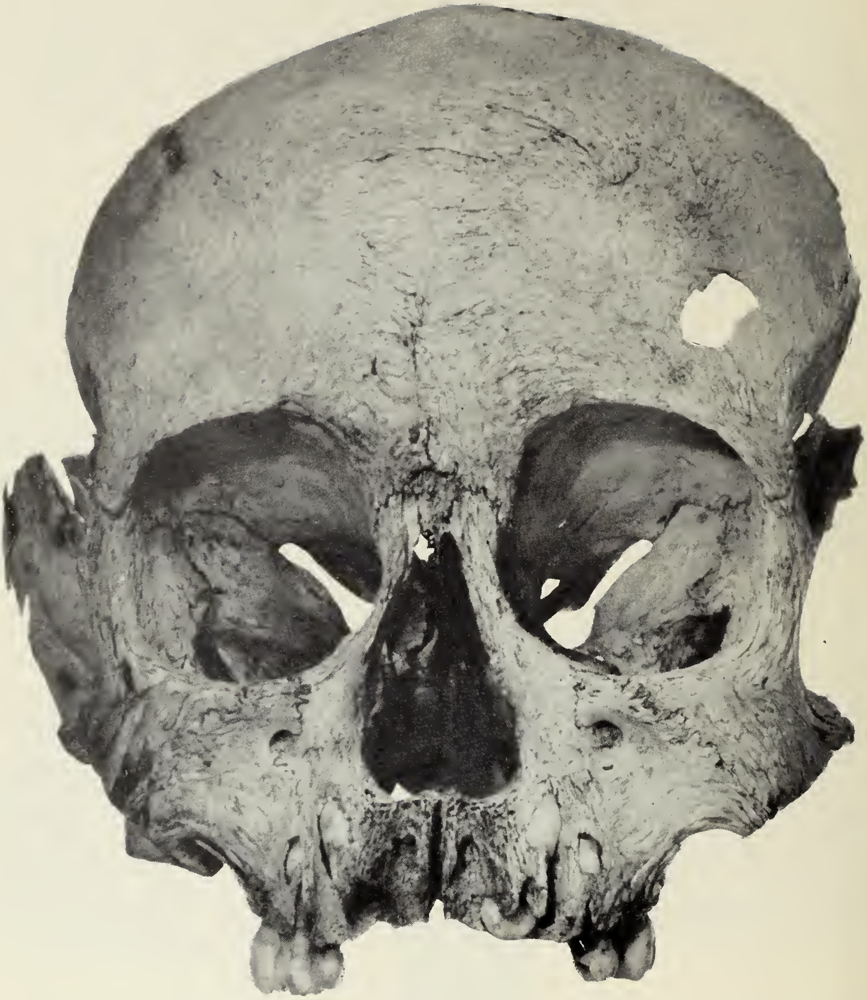

PLATE XI *The facial skeleton of Burial 12, showing the erupting dentition and the stress lines exposed by weathering of the outer table of compact bone. Acc. No. 953.129.4.*